CLOSED CIRCUIT TELEVISION (CCTV) AND ITS APPLICATION TO PUBLIC SAFETY INITIATIVES: Effectiveness and Considerations

By
Colleen Kerr

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Name: Colleen Kerr

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Examining Committee:

_____

First Supervisor Dr. Darryl Plecas

_____

Second Supervisor Dr. Irwin Cohen

_____

External Examiner

_____

CHAIR, Exam Committee

Date Defended/Approved:

ABSTRACT

Closed circuit television (CCTV) is increasingly being promoted as an intervention for use in public settings aimed at reducing crime and fear of crime. This paper explores the question of whether or not CCTV actually does what it is being promoted to do, and also examines a number of other salient issues related to CCTV, including the privacy concerns surrounding its implementation, environmental determinants, such as political and media influences which affect public support of CCTV, as well as operational and management considerations. The paper emphasizes the value of program evaluation and evidence-based approaches as integral pieces which should be included in the decision making process by policy makers as well as practitioners when considering CCTV as a crime control measure.

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Introduction

In Canada, Closed Circuit Television technology (CCTV) is being considered as part of the strategy to prevent crime and the fear of crime. This approach is not new as the implementation of CCTV systems has risen steeply over the past decade in the UK. CCTV systems are now being considered or are actively in use in Canada in public transportation settings, airports, intersections as 'red light cameras', markets, shopping malls, universities, government buildings, and public streets. These systems are being increasingly promoted for their deterrent value, their ability to promote public safety, detection enhancement capabilities, and their usefulness in decreasing police response times.

This major paper focuses on examining CCTV's prevalence, effectiveness, and implications specific to public street surveillance. The paper is organized to provide an overview of the background and rationale of camera surveillance in public safety settings. As such, Chapter One begins with a definition of CCTV followed by an examination of how CCTV is evolving and experiencing ongoing technological advancements. A summary of the following four technological advancements will be provided: (1) observation technologies; (2) tracking technologies; (3) recording technologies; and (4) identification technologies. A review of the history and prevalence of CCTV video surveillance in public safety settings, worldwide, will also be provided.

Chapter Two will examine the research on whether CCTV reduces crime. This chapter explores the general conclusion that the research on CCTV's effectiveness for reducing crime has produced inconsistent findings. Moreover, the methodological problems with the research will be considered. CCTV's effect on personal and property

crime, and the role of CCTV on crime displacement, will also be examined. This chapter also considers the effect of CCTV on fear of crime. It provides an introduction to the concept of fear of crime and the difficulties associated with measuring it. Chapter Three examines the importance of public expectations, the media, publicity, and political pressures on CCTV's effectiveness and implementation. Case study examples from three Canadian cities will be analyzed to demonstrate the importance of these influences on the implementation of CCTV.

Chapter Four is dedicated to exploring one of the leading arguments against the use of CCTV in public safety settings; the potential threat that the system poses to citizens' privacy rights and civil liberties. In this chapter, the importance that legal scholars and justice systems play in the development of regulations and systems designed to guide law enforcement's use of video surveillance is examined. An overview of recently developed Canadian guidelines is also provided in this chapter.

Chapter Five is dedicated to issues of training, management, and operational policies for the administration of CCTV systems. The UK is a leader in the development of CCTV and, as a result, they have emerged as leaders at the forefront of the movement to ensure that standards are developed and adhered to. For this reason, the major emphasis of this chapter derives from the UK's recommendations as outlined in a document entitled, "National CCTV Strategy" (2007). As well, a discussion of the importance of evidence-based decision making in the development of programs and the value of strong evaluation practices for crime prevention and deterrence initiatives will be reviewed.

Chapter One: CCTV and Its Uses

Any discussion of the prospective implementation of Closed Circuit Television surveillance (CCTV) requires that this technology be defined. For the purpose of this paper, CCTV refers to "electronic monitoring systems which make use of video cameras, connected by means of a 'closed' (or non-broadcast) circuit, to capture, collect, record, and /or relay visual information about the event-status of a given space over time" (Royal Canadian Mounted Police, 2003: 7). As identified by the Constitution Project, a liberty and security committee based in America that is non-profit and bipartisan, CCTV's latest advances can be divided according to the following categories: (1) observation technologies; (2) recording technologies; (3) tracking technologies; and (4) identification technologies.

Significant advances have occurred in the ability of cameras in the area of observation technologies. Earlier systems, as well as many currently used systems, are able to 'see' approximately the same distance as the human eye, but with a narrower field of view (Report of the Constitution Project's Liberty and Security Committee, 2007). In contrast, the newer systems are able to pan and tilt in a variety of directions by the use of controls employed by the operators which can effectively expand the area of coverage as well as increase magnification to significantly improve the image detail. "With a mere 60-times optical zoom lens, a camera can read the wording on a cigarette packet at 100 yards" (Slobogin, 2002: 72). And, some cities are reportedly deploying cameras capable of 400-times magnification (Kinzer, N.Y. Times, Sept. 21, 2004). Other new technologies are also enhancing images captured in very low light. As well, the use of infrared 'night-

vision technology' can expose images observed in no light (Report of the Constitution Project's Liberty and Security Committee, 2007).

Specific to recording technologies, the new digital video technologies have better recording quality and lower storage costs compared to the older analogue recordings. These management improvements are further enhanced by 'metadata' or extra information about the recording or the captured images that increases the usefulness of the recording (Report of the Constitution Project's Liberty and Security Committee, 2007). For example, a camera can record information about filming a specific location such as date, time, location, and summarized information, such as numbers of vehicles or people, as well as specific information about individuals that have been recognized – such as numbers of times they have previously visited the location or if they have a criminal record. Recorded digital footage data can also be searched more easily than analogue footage, and, when combined with the rich metadata, the footage can be catalogued into a database that is easily searched for specifics, such as an activity or individual, which can be further developed into a 'digital dossier' about the activity or individual (Solove, 2002). As well, the data or footage can be directly reviewed for any time or location that exists in the database.

The newer systems and camera networks can also be further enhanced with technology that allows the camera to "track movement in their field of view or across networked cameras" (Report of the Constitution Project's Liberty and Security Committee, 2007: 5). Simple motion detectors can turn the camera on to record when movement is detected, and even more advanced systems can track an object moving through its field of view. When these features are combined with pan, tilt, and zoom

technology, a camera could be set to track a person as they walk the full length of city blocks, around corners, or even from a building to a vehicle. Software can also be added to perform even more sophisticated tracking, such as recognition of unusual or suspicious movement or analysis of information, such as speed, path, and destination.

> In contrast to the popular image of a lone security guard watching a bank of grainy monitors, systems commercially available today can provide a unified, virtual-reality perspective of a monitored area—similar to the interface of the popular Google Earth software—allowing an operator to automatically follow an object as it moves from camera view to camera view. In real time or using stored data, law enforcement can actively and pervasively track specific individuals or activity in large areas, or even be notified if the system detects unusual activity (Report of the Constitution Project's Liberty and Security Committee, 2007: 5).

Continual improvements are taking place in the area of automated identification software. Prior to these technological advances, law enforcement would typically know the identity of the people they were specifically monitoring, or they would seek citizen assistance in identifying a suspect caught on video. This approach is evolving as quickly as the technology. For example, footage of license plate numbers can identify specific vehicles or the data from these plates can be compared to information in databases of stolen plates or vehicle lists for quick analysis. This automated license plate recognition (ALPR) technology is being utilized in an increasing number of countries including Canada and the UK. For example, Cohen and Plecas (2007) reviewed the effectiveness of ALPR as a strategy identified to keep citizens safe from the risks associated with unlicensed, prohibited, or uninsured drivers in British Columbia, Canada. Their report stated that while the use of ALPR "can assist in the identification of stolen vehicles as well as unlicensed and/or prohibited drivers, ALPR can also assist the police to identify persons of interest associated with other criminal activity" (Cohen and Plecas, 2007: 1).

Another technological advancement has implemented radio frequency identification in employee badges and "E-ZPass" systems which can be combined with surveillance systems (Glancy, 1995). As well, facial recognition systems continue to improve in quality and reliability (Shachtman, 2006). Advancements such as these are becoming increasingly sought after by law enforcement agencies hoping to examine video footage for suspects in a similar way that fingerprints from a crime scene are compared against a database of criminal fingerprints. In effect, facial recognition may eventually be used to track and catalogue an individual's movements while under surveillance. Members of the US Congress have expressed an interest in utilizing biometric identification, such as iris scanners and facial recognition, to categorize and identify individuals on watch lists specific to terrorism (Festa, 2003). Smaller scale facial recognition and iris scanner systems are already in place in a joint program operating in Canada and the US, where iris scanners are being used for previously cleared individuals in the Nexus program. The Nexus program is one which allows for frequent travellers who are pre-screened through a security and finger printing process, to use a dedicated traffic lane for access between the two countries. A new expansion to this program was launched as the first of its kind in North America in Vancouver, B.C. on November 30, 2004. This initiative was announced as a joint pilot project at a meeting in Ottawa with Department of Homeland Security Secretary, Tom Ridge, and Canadian Deputy Prime Minister, Anne McClellan, and was initially developed for use at airports for pre-approved, low-risk, frequent air travelers. What is unique about this pilot project is that the process has been expanded to allow Nexus Air members, who have added to their security clearance information a recording of their 'iris scan', to have streamlined access at the airport border by using

automated kiosks with touch screens to answer questions similar to those an inspection officer would ask. A camera on the kiosk takes a photo of the member's iris to verify their identity. This iris recognition process ensures that only pre-approved, low-risk travelers receive faster border processing (Retrieved February 23, 2008 from http://www.cbp.gov/xp/CustomsToday/2004/Dec/nexus.xml). Another American example is in Virginia Beach, where facial-recognition devices are used in its permanent boardwalk video surveillance system (Guterl and Underhill, 2004). New York has reportedly contemplated installing numerous biometric recognition devices in Times Square (NPR radio broadcast Feb. 25, 2002). Perhaps most famously, security for the 2001 Superbowl included hundreds of facial recognition cameras (Woodward, 2003).

Ongoing technological advancements coupled with increasing fears of terrorism and crimes have increased the pressure to boost levels of surveillance and ensure the monitoring of public spaces in Canada. It is generally recognized that as the suburbs continue to expand and become more urbanized, researchers and citizens are recognizing a decline in the overall sense of community and an increase in fear of crime (Wilson-Doenges, 2000). Increasingly, CCTV is being considered as part of the solution to respond to the fear of crime. CCTV systems have been increasingly considered for use in public sector management primarily for deterrence, public safety, detection enhancement, and decreasing police response times (Royal Canadian Mounted Police, 2003). According to Hemple (2001), "in the contemporary context, the predominant uses of CCTV in public spaces are in the management of risks, traffic jams, fire, accidents, and crime prevention" (Deisman in Royal Canadian Mounted Police, 2003: 4). Cameras are now being considered or are actively in use in public transportation settings, airports,

intersections as ‘red light cameras’, markets, shopping malls, universities, government buildings, and public streets.

The use of cameras and photographic images for use in crime control originated when photography itself was first invented. The first patented photographic procedure date back to Paris in 1839 and “by the 1840’s, its potential for identifying and documenting the criminal classes had already been recognized” (Sekula, 1992: 334). In England and France, by the mid 1850’s, the process of taking photographs of prisoners to “prevent escapes and to document recidivism was being officially encouraged” (Rouille, 1987: 51). The history of television use in crime control is similar. Television pictures were first broadcasted in 1926, and then were introduced for public use with an official launch by the BBC in 1936. Williams (2003) stated, that within a decade, in 1947, a police superintendent requested use of BBC’s footage of the Royal wedding to assist in management decisions and deployment of officers; a request that was denied because of expense (Norris, McCahill, & Wood, 2004). In 1956, police in Durham, England began to use CCTV to assist in the operation of traffic lights. By 1960, the Metropolitan police mounted two pan-tilt and zoom cameras to monitor crowds in Trafalgar Square during a State Visit to Parliament. This installation was considered temporary, yet later that same year, was reinstalled to monitor party goers on Guy Fawkes Night. Norris et al. (2004) noted that, by 1969, 14 different police forces were using CCTV with a total of 67 cameras nationally across Britain. As well, given that the video recorder was increasingly available commercially during the 1960’s, the early growth of CCTV for use in retail settings had begun, evolving over the next two decades to become a routine part of security for the retail sector as the predominant locations for everyday usage. Limited

diffusion into other sectors occurred, with the exception of the London Underground transit system which installed cameras in 1975 to prevent assaults to staff and prevent robberies. That same year, 145 cameras were used to monitor traffic flow in Central London. McCahill and Norris (2002) stated that the use of cameras by police in the 1970's and early 1980's was, for the most part, used to focus on marginal groups, such as football hooligans and political demonstrators (Norris et al., 2004).

In 1985, Bournemouth, a city in the UK, became the first to implement a permanent public CCTV camera as it was hosting the annual Conservative Party Convention and an attempt by the IRA to assassinate the Prime Minister and her Cabinet had occurred at the Convention the previous year (McCahill and Norris, 2002). CCTV began to gradually spread to other towns and cities throughout the UK and, by the end of the 1990's, over 500 monitoring systems were in place with a broader dissemination occurring in the retail and transport sectors. "By 1991, in the UK, there were no more than ten cities with open street systems in operation. What characterized these systems was that they were small scale, locally funded, and set up as the result of entrepreneurship, often on the part of a local police officer" (Norris, McCahill, & Wood, 2004: 111). Norris et al. (2004) speculated that the diffusion of CCTV may have continued in this gradual manner had it not been for the tragic and highly publicized "fuzzy CCTV images of toddler Jamie Bulgar being led away from a Merseyside shopping mall by his two ten-year old killers", which served to position CCTV in the public spotlight. (Norris, McCahill, & Wood, 2004: 111). And, while it was recognized that CCTV had not prevented the murder, it did serve to dramatize the event to the public, through the nightly recurrence of the story and its images on the national news, that the killers would be caught (Smith, 1994). This heightened public

anxiety, combined with increased recorded and publicized crime by the media, led to an announcement by Home Secretary, Michael Howard, of the 'City Challenge Competition' which dedicated two million pounds of central government funding for open street CCTV. A huge response occurred resulting in an increase to five million pounds, as well as three more 'City Challenges' taking place between 1995 and 1998. Government funding, as well as the promotion of partnerships with the private sector through 'matching funds', resulted in nearly one billion pounds being funnelled into CCTV systems at a rapid pace. And, despite the change in elected parties in 1997, the funding continued. On the basis of figures available, "during the decade 1994-2004 we would estimate that around four to five billion pounds was spent on the installation of CCTV and maintenance of CCTV systems in the UK, and this excludes the monitoring costs associated with these systems" (Norris, McCahill, & Wood, 2004: 112). It is impossible to translate this into an exact number of cameras, yet, in 1999, Norris and Armstrong estimated that:

> In an urban environment, on a busy day, a person may have their image captured by over 300 cameras on thirty separate CCTV systems. More recently, Norris and McCahill 'guestimated' on the basis of a survey in one London borough that there may be as many as 4.2 million cameras in the UK or 1 for every 14 of the population (Norris, McCahill, & Wood, 2004: 111).

According to Norris (2003), "recent estimates indicate that 800 publicly funded systems are operational, supporting more than 40,000 public cameras across the UK" (Hier et al., 2007: 727). CCTV is now commonplace in the UK and has continued to expand despite mixed research findings. McCahill and Norris (2003) estimated that over four million public and privately owned cameras exist in the UK. According to Tony McNulty, Minister of State for Security, Counter Terrorism, and Police and Ministerial

Adviser on Parliamentary Affairs, in the Home Office's report entitled, "National CCTV Strategy":

> The United Kingdom is generally recognised as a leading user of Closed Circuit Television (CCTV) for community safety and crime investigation purposes. We regularly see examples of where it has been used to make our streets safer, reduce the fear of crime, and detect serious offences. The use of CCTV in the support of terrorist investigations in the UK has led to considerable worldwide interest, with many countries now following us in developing CCTV infrastructures (Home Office National CCTV Strategy, 2007: 4).

In other parts of Europe, the use of CCTV in public open street surveillance is less commonplace. According to the Urbaneye report completed in 2004, while there were 40,000 open street cameras in the UK designed to monitor public space, less than 1,000 existed in the other European countries included in the study. In Oslo and Norway, there was one system; there were none in Copenhagen and Vienna; Budapest had over 14; and Berlin had 15 (Urbaneye, 2004). The Urbaneye data suggested that the diffusion of CCTV across Europe was limited; however, in some other European cities which were not included in the study, a substantial increase in the number of CCTV systems for use in open street surveillance existed. For example**,** in France, particularly since the relaxation of laws governing public street surveillance in 1995, a rapid increase of CCTV systems took place. "Between 1997 and 1999, more than 200 French cities received the approval for the installation of CCTV in high risk locations and 259 for the protection of public buildings such as town halls, public libraries, schools and museums" (Hempel and Topfer, 2002: 10). The Netherlands also installed their first cameras for public space surveillance in 1997 and within six years, of the country's 550 municipalities, over 80 were using CCTV in public spaces. In the Republic of Ireland, Dublin installed its first system in the mid 1990's with further expansion occurring in 1997. Since then, further

expansion of open street systems throughout the country, to over 21 different areas, has taken place. In Italy, 22 of the 33 sports facilities with over 20,000 spectator capacity were equipped with camera surveillance and 50 of Italy's cities have installed systems in areas which have been categorized as most sensitive (Norris et al., 2004).

In the United States (US), public video surveillance systems were first experimented with by cities which mounted cameras over public streets in the 1960s (Burrows, 1997). Even though these early systems have been removed, police have continued to make use of selective public video cameras as a means of gathering evidence about a specific individual or place as an integral part of their investigations (Report of the Constitution Project's Liberty and Security Committee, 2007). In the first national survey of CCTV systems conducted in 1997, it was determined that only 13 police departments in the US were using CCTV video surveillance and these systems were used predominantly for pedestrian and traffic monitoring in downtown and residential districts. By 2001, the number of American cities with systems to monitor public spaces expanded to 25. The systems at that time ranged from the less complex system set up in the San Diego museum and mall areas of Balboa Park, to much larger systems, such as those in Washington DC which included hundreds of cameras for monitoring mass transit, shopping areas, schools, monuments, streets, and neighborhoods. More notably, the images captured by law enforcement of the hijackers involved with the terrorist attacks of 9/11 in 2001 served to demonstrate the importance and effectiveness of video technology (Report of the Constitution Project's Liberty and Security Committee, 2007). Although there is limited data on the extent of expansion of CCTV since 9/11, Nieto et al., (2002) argued that expansion and rapid diffusion of both

biometric technologies and CCTV surveillance would occur as a result of technological advances, heightened security concerns, and declining costs. It is projected that most American cities would likely follow the lead of Chicago which, "in September of 2004, announced plans to install more than 2,000 surveillance cameras in public places" (Norris et al., 2004: 114-115). Norris et al., (2004) noted that, compared to the UK, the US had moved slowly with CCTV expansion and the growth that had occurred was predominantly in the private sector. In Hallberg's 1996 national survey of US businesses, it was found that 75% of all businesses used CCTV (Norris et al., 2004). However, police often utilized footage gathered from privately managed cameras, such as those at convenience stores, ATM's, and in airports (Report of the Constitution Project's Liberty and Security Committee, 2007).

Sutton and Wilson (2003) reviewed CCTV in Australia and reported that an increase from 13 systems in 1996 to 33 in 2002 took place. Australian systems have been most often utilized in public transport systems with over 5,500 systems in the state of New South Wales which operated at over 300 stations, over 1,900 buses, and in 75% of taxis (Norris et al., 2004). In a report conducted by Van Rensburg in 2001, it was reported that in Africa, CCTV systems were used in almost all commercial venues, such as hotels, casinos, banks, retail stores, airports, financial institutions (excluding ATM's), mines, garages, hospitals, and shopping centres (Norris et al., 204:115). In 2004, following the high profile murder of a passenger, the South African Railway Commuter Corporation announced a 200 million Rand plan to equip each of its 4,500 train carriages with four CCTV cameras. By 2000, Cape Town had already installed 72 open street cameras and had outlined a ten year plan for an expansion to extend cameras citywide

(Damon, 2003; Smith, 2000). The largest surveillance system in Africa is in Johannesburg which established a 15 camera system in the year 2000 with joint funding from the City Council and the Provincial Government. The system had expanded to 90 cameras over the next year, and was predicted to be up to 360 cameras by the year 2003 (Wilson and Sutton, 2003).

In China, the Golden Shield Project was a national surveillance plan to develop a comprehensive and advanced CCTV infrastructure. The Straits Time newspaper dated August 14, 2004, reported that, by the year 2010, Shanghai would have more that 200,000 CCTV cameras installed throughout the city to deter crime and maintain social order (Straits Times, 2004). In 2002, the cameras in Tokyo were located in either the adult entertainment district, which had 50 cameras, or in the governmental district which had a total of 24 cameras. Matsubara (2004) predicted that an increase in the number of systems would occur as there had been a marked increase in recorded crime (Norris et al., 2004).

Middle Eastern countries, India, Russia, and Eastern Europe have all introduced and expanded CCTV video surveillance for varying reasons over recent years. In India, it was noted that systems were not used for the purpose of watching over its cities, but were installed with the intent of monitoring the behavior of junior police officers. In Israel, systems were focused at key strategic locations which had been identified as being vulnerable to car and suicide bombings. According to Norris and Armstrong (1999), the use of covert cameras was well documented in the former communist bloc countries, yet little documentation has developed since the fall of the Berlin Wall. In October of 2004, the Security Installer magazine predicted electronic security growth prospects would

occur in central and Eastern Europe by the year 2010. In a Czech Police force study, it was reported that, in Prague, 200 cameras were reported to be installed in the city's central streets which later would be linked to an automatic facial recognition system (Norris et al., 2004).

According to the Canadian Office of the Privacy Commissioner's report (2006), the use of video surveillance in public spaces has increased substantially over the past decade in Canada. Technological advancements, reductions in prices, and increased availability of these systems has led to rapid increases in the number of systems being implemented by public authorities, private sector parties, and property owners (Government of Canada, Office of the Privacy Commissioner Guidelines, March 2006). The police and public security agencies use the systems to monitor public spaces and parks; some cities have placed video surveillance systems for use during specific festival periods. Moreover, the Royal Canadian Mounted Police (RCMP) have implemented surveillance technology in high security areas, such as Parliament Hill, and cameras are in active use at Canada-US border crossings. In terms of future projections of CCTV usage, the Vancouver Sun newspaper reported in August 2007 that the cost and extent of security for the Olympic Games to be held in Vancouver in 2010 would far exceed the original estimates and will involve advances in surveillance, including CCTV (Vancouver Sun newspaper, August 4th, 2007). More recently, the Canadian Broadcast Corporation (CBC) reported that the system of cameras expected to be installed for 2010 may not be removed after the Olympics, a statement which created an influx of concerns and comment submissions from civil libertarians concerned about privacy, as well as responses from supporters who felt that the cameras would make Vancouver a safer city (Canadian Broadcast

Corporation, on-line report May 12, 2008). And, "as 2010 approaches, British Columbians can expect to see tighter security around transportation infrastructure, including ferries" (Vancouver Sun newspaper, August 4th 2007: A5). The Vancouver Province newspaper reported on May 16, 2007, that Transport Canada's Transit Secure Initiative earmarked $115 million for a program to make Canada's six major transit systems more secure. At the time of the writing of the article, Greater Vancouver's Translink system had received $9.8 million of the dedicated federal funding for its CCTV and security enhancements. As well, Canadians are likely to expect to see an increase in the number of 'red light cameras' at intersections to monitor, deter, and apprehend traffic signal light offenders (The Surrey NOW, August 21, 2007). At the time this newspaper article was written, Surrey had 13 operating red light cameras at intersections. When asked if the cameras worked to decrease the number of crashes, three of the key project partners stated yes. The Insurance Corporation of British Columbia (ICBC), the police services department of the Ministry of Public Safety and Solicitor General, who provide joint funding of the project, as well as RCMP Cpl. Lloyd Holtzmann of the Intersection Camera Unit were all in agreement that the cameras were an effective tool for use in public safety. "We've seen a 14% reduction in crashes across the province at intersections where there are cameras. It's an effective tool to help with overall collision reduction" stated Kate Best of ICBC (Surrey NOW newspaper, August 21, 2008). It was further stated that there were 120 camera locations throughout the Province of British Columbia which were rotated with operational cameras, making it impossible to tell if the camera is set up to take photos or not. Essentially, at any given time at these camera locations, any vehicle passing through the intersection on a yellow or red light will activate the

equipment. According to the number of violations recorded in Surrey, a drop from 1,500 in 2002 to 1,000 in 2006 occurred and Surrey Mayor, Diane Watts expressed a desire to install more operational lights (Surrey NOW newspaper, August 21, 2008).

As demonstrated in this review of the history of CCTV, as well as the overview of the technological advancements and usages of various systems worldwide, the trend towards an increasing number of cameras being used for the purposes of public safety is taking place. As well, the discussion of CCTV expansion worldwide in the private sector has led experts, such as Norris (2004), to take note of a diffusion of systems into the public realm. With increasing urbanization and the resultant trend towards anonymity, combined with increased mobility, high profile attacks of terrorism, and an overall societal focus on crime and crime control, CCTV systems will continue to develop, evolve, and expand in number (Norris et al., 2004). The next chapter will examine the issues surrounding CCTV's effectiveness. As will be demonstrated, research on the effectiveness of CCTV is often contradictory. In addition to reviewing the research, one of the objectives of this paper is to outline why studies of CCTV to date have produced varying results and what methods of evaluation are most effective.

Chapter Two: CCTV's Effect on Crime and Fear of Crime

According to Armitage (2002), the idea that CCTV can play a part in reducing crime is based on a number of key assumptions. The first assumption is about the concept of deterrence. Essentially, the first assumption is that the potential offender becomes aware of the existence of CCTV surveillance and assesses whether the risks associated with offending at this particular location outweigh the benefits. The individual then makes a choice to not offend or to offend somewhere else (Armitage, 2002). The second assumption is based on the premise of efficient deployment, which refers to the ability of the individuals who are monitoring the systems to determine whether or not police assistance is required, results in a more effective use of police resources. Thirdly, an assumption based on the concept of self discipline occurs on two levels: the first level occurs within the potential victim who is reminded of the possibility of crime occurring and chooses to alter their behaviour accordingly, while the second level the self discipline occurs within potential offender. In the case of the offender, "through a process similar to that described by Foucault in his discussion of Bentham's Panopticon, the threat of potential surveillance (whether the cameras are actually being monitored may be irrelevant) acts to produce a self discipline in which individuals police their own behaviour" (Armitage, 2002: 2). In the Panopticon (Foucault, 1991) prison cells were arranged around a central watchtower where a guard could constantly watch over inmates. The inmates were never quite sure whether they were being watched or not which resulted in them policing their own behaviour. In this way, the effect of CCTV cameras may lead to self discipline through the fear of surveillance, even if it is only imagined (Armitage, 2002). The fourth assumption is the presence of a capable guardian.

According to Routine Activities theory, in order for a crime to be committed, three factors must be present: a motivated offender; a suitable target; and the absence of a capable guardian. Any act that prevents the existence of all three of these factors taking place at the same time and in the same place reduces the likelihood of a crime occurring (Armitage, 2002). The assumption here is that CCTV serves to fill the role of a capable guardian (someone watching) resulting in reductions in crime (Cohen and Felson**,** 1979). The fifth and final assumption is detection. This premise is based on the idea that crimes captured on video surveillance are detected and lead to the arrest and punishment of the offender (Armitage, 2002). CCTV has been used in several high profile cases demonstrating its contributions in the detection of criminal behaviour, identification of suspects, and arrest of the offender (Armitage, 2002).

A substantial amount of research affirmed CCTV's effectiveness in reducing crime, especially specific types of property crime.

> Research into the effectiveness of CCTV suggests that it is most effective in reducing property crime. This goes some way to supporting the 'rational choice theory' which suggests that offenders seek to maximize the benefits of offending and in doing so make rational choices or decisions based upon the information or cues available to them at the time of the offending. CCTV appears to deter the criminal in offences such as vehicle crime or burglary, perhaps on the basis that they perceive the risk of apprehension to outweigh the benefits (Armitage, 2002: 3).

Tilley (1997) concluded that car parks with CCTV installations had lower rates of car crime when comparing the same area before the installation took place, as well as in comparison to a control group, with the effects being stronger for theft from versus theft of vehicles. Tilley studied car crime in the late 1980's to early 1990's within the six Safer Cities schemes of Hartlepool, Hull, Bradford, Lewisham, Coventry, and Wolverhampton which examined a variety of different car park settings. The overall conclusion was that

the data provided strong evidence that schemes which implemented CCTV had generally led to reductions in various categories of car crime with an overall understanding that it worked best when implemented alongside other crime prevention measures, such as lighting, fencing, and painting (Tilley, 1997). However, in a systematic review of the crime prevention effects of CCTV, Welsh and Farrington (2002) dismissed Tilley's studies based on poor evaluation criteria, namely for not having comparable control sites. Short and Ditton (1996), as well as Armitage (1999), found CCTV had an effect on reducing vehicle crime, yet, Welsh and Farrington also critiqued these studies for their lack of control sites or crime data within the control sites. According to Armitage (2002), Skinns (1998) found a reduction in vehicle crime following the installation of CCTV within the city centre of Doncaster. Armitage (2002) also noted that, in an analysis of three town centres in the UK, Brown (1995) found overall property crime was reduced within the areas where CCTV was implemented, yet, once again, Welsh and Farrington do not include this study in their systematic review in 2002 because no crime data for the experimental or control areas were provided.

Poyner (1992) concluded that significant decreases in thefts from vehicles occurred as a result of CCTV installation. In this study, Poyner (1992) examined car parks at the University of Surrey in Guildford in the UK and noted that a significant decrease in thefts from cars; from 92 incidents to 31 over the one year time span in car parks which implemented CCTV (1985 to 1986), and a reduction of 15 to 12 incidents of theft of vehicles. Squires (1998), in his study of Ilford Town Centre, concluded that reductions occurred in criminal damage offences (vandalism). In his study, Squires interviewed a total of 1,532 people in two surveys, 12 months apart before and after the

installation of CCTV. His goal was to determine public support for CCTV and overall feelings of safety. His findings were that 92.6% of the people were in favour of CCTV before its installation and 95.2% were in favour afterwards. Additionally, he studied police crime data recorded from June 1996 to December of 1997. Armitage et al. (1999), in a study of Burnley Town Centre, found reductions occurred as a result of CCTV installation in all crime categories, including car crime, burglary, vandalism, fraud, and handling of stolen goods.

In an analysis of the effect of CCTV on burglary, Chatterton and Frenz (1994) found CCTV was effective at reducing burglary in a sheltered housing setting and cited a 79% decrease in burglary completions and attempts for the 5-10 month period studied. However, Welsh and Farrington (2002) in their critique of various research studies of CCTV noted that no control group was included in the Chatterton and Frenz study. Still, Armitage et al. (1999) reached a similar conclusion stating that burglary decreased with CCTV implementation. Decreases in vandalism were also found by Armitage et al. (1999) and Squires (1998). Poyner (1992) found that CCTV's effect on vandalism rates was unclear in general, but had a positive effect in the specific setting of buses. Short and Ditton (1996) found reductions in shoplifting, vehicle crime, fraud, burglary, and arson as a result of the introduction of CCTV cameras in Airdre. In Squires' (1998) study of Doncaster city centre, vehicle crime decreased (Armitage, 2002). Drug offenses appeared to experience significant reductions (Armitage et al., 1999).

There is also research which contradicted CCTV's effectiveness at reducing property crime. Brown (1995) found no reductions in burglary rates following the installation of CCTV and measured an increase in theft from vehicles and vandalism.

Likewise, in his study of Ilford Town Centre, Squires (1998) found no reductions in shoplifting and burglary as a result of the installation of CCTV. Armitage (2002) stated that, in a study of Doncaster city centre, Squires (1998) also found that burglary, vandalism, nor shoplifting decreased as a result of CCTV. Grandmassion (1997) found no overall change specific to vandalism. Squires (1998) did not find that the implementation of CCTV reduced drug offences, and Skinns (1998) was unable to conclude that CCTV installation reduced personal crime (Armitage, 2002; Royal Canadian Mounted Police, 2003).

Generally speaking, property crimes were reduced with CCTV more than other types of crimes, especially theft from vehicles and theft of vehicles (Brown 1995; Skinns 1998; Tilley 1993). In Welsh and Farrington's 2002 comprehensive review of 22 studies to determine the effect of CCTV on crime rates, the authors concluded that 11 of the studies showed CCTV produced a desirable effect on crime, five showed an undesirable effect on crime, and no clear evidence of effect for the remaining five.

Research on CCTV's effectiveness in reducing personal crimes has also produced some positive results. Armitage (1999) found significant reductions in violence in Burnley town centre after CCTV was installed. Webb and Laycock (1992) found that, as a result of CCTV installation, incidents of robbery decreased in London Underground stations (Deisman, 2003). The Ilford study (Squires, 1998) also found decreased robbery and theft from person offences. Some research, however, also suggested that CCTV's effectiveness at reducing crimes against or involving people contradicted the positive results of the above studies. "In crimes involving alcohol (such as public disorder) where 'rationality' is often lost, the deterrent or 'risk' effect of CCTV is weakened" (Armitage,

2002: 3). In his research on CCTV's effectiveness, Skinns (1998) did not find significant reductions on the personal offence of assault.

The question of CCTV's efficacy in reducing crime is complicated by displacement. The concept of displacement suggests that the introduction of measures to prevent crime, such as CCTV, in a specific area will reduce crime opportunities resulting in offenders either not committing an offence (deterrence) or selecting a more desirable target elsewhere (displacement). In other words, the crime may not actually be reduced, but shifted to another location.

> The principal theoretical criticism levelled against opportunity-reducing forms of crime prevention, such as situational prevention, is that thwarted offenders will turn their attention to some other target or location, commit their crimes at another time, change their methods, or even turn to some other form of crime (Clarke and Weisburd, 2008: 165).

In support of the displacement position, Brown (1995) found that personal crimes, including robbery and theft, increased in outlying areas not covered by CCTV. A similar result was also found by Skinns (1998). In contrast to the effect of displacement, others studies have suggested that outlying areas may also benefit from the introduction of crime prevention measures through what is known as a 'diffusion of benefits'. This concept can be described as "the spread of the beneficial influence of an intervention beyond the places which are directly targeted, the individuals who are the subject of control, the crimes which are the focus of intervention, or the time periods in which the intervention is brought" (Clarke and Weisburd, 2008: 169). Clarke and Weisburd (2008) outlined two types of diffusion. The first type is known as 'deterrence' and the second as 'discouragement'.

> The clearest example to date of this form of diffusion of benefits (deterrence) is provided by Poyner's (1988) evaluation of the use of CCTV to combat vandalism and graffiti on a fleet of 80 double-deck buses in the North of England. Even though live cameras were installed on only two of the buses and dummy cameras on another three, vandalism and graffiti declined sharply for the whole fleet. This diffusion seems to have been assisted by some well-publicized apprehensions of juvenile vandals resulting from use of the CCTV and by a deliberate effort to demonstrate the operation of the CCTV by taking one of the "video buses" around the schools in the area (Poyner, 1988, as cited by Clarke and Weisburd, 2008: 171).

Two other examples of diffusion were observed in a study conducted in a university parking lot in England and in an electronics warehouse in New Jersey. In the first example, Poyner (1991) found equal reductions in auto thefts in Surrey, England for lots not covered by CCTV and in the university parking lots where the CCTV was installed. Poyner summarized his findings as "the CCTV system enabled the security guards to make three arrests immediately after the system became operational and three further arrests and two specific loudspeaker warnings in the following three months" (Poyner, 1991, as cited by Clarke and Weisburd, 2008: 172). In the second example, Masuda (1992) found that the action of repeatedly counting of VCR's and camcorders kept in a storage area resulted in reductions in theft of the items as well as reductions in theft of other valuable items, such as portable CD players and radar detectors which were not being counted. In this case, warehouse staff was aware of the daily counting procedure, but not which items were being counted (Clarke and Weisburd, 2008).

> 'Situational deterrence' (Cusson, 1993), which underlies the first kind of diffusion, achieves its effect by increasing the fear of arrest. However, risk of apprehension (and the subsequent punishment) is only one of the factors that offenders weigh when deciding to commit crime. According to the rational choice perspective, they also consider effort and reward. When the former has become incommensurate with the latter, offenders may be discouraged from crime even if the risks of detection have not increased. The spread of such discouragement beyond the crimes targeted constitutes the second form of diffusion (Clarke and Weisburd, 2008: 172).

This second form of diffusion, known as ‘discouragement,’ was demonstrated in a study by Poyner and Webb (1987), which, though not specifically related to CCTV, served to effectively demonstrate the concept. Poyner and Webb (1987) demonstrated that improved lighting and reduced congestion in the most vulnerable markets in Birmingham, England resulted in reduced thefts at all city centre markets. "What seems to have happened is that by improving the worst areas of risk, the whole market area has benefited. The general attractiveness of this area for thieves has been reduced" (Poyner and Webb, 1987, as cited by Clarke and Weisburd, 2008: 173). This explanation has also been described as the ‘multiplier effect’ (Chaiken et al., 1974). In their research, which attempted to explain sudden increases followed by decreases in subway and bus robberies in New York in the 1970’s, fluctuations occurred as a result of a few offenders demonstrating that a particular type of crime or time of day proved to be a profitable opportunity for crime. This success led others to try it which resulted in a rapid increase of incidents. Next, an anti-crime measure was implemented which served to demonstrate that the chances of success had changed, at least temporarily, resulting in “the multiplier effect operating in the opposite direction, causing a decrease that may even be greater than that merited by the effectiveness of the measure” (Chaiken et al., 1974, as cited by Clarke and Weisburd, 2008: 173). In essence, the idea of discouragement is based on the notion that offenders assess the level of risk and make rational choices based on the likelihood of getting caught. If the likelihood of getting caught is high, they are discouraged from offending. The limitations of this perspective, however, are that offenders who do not think rationally about their potential capture, due to factors such as drug addiction or hopelessness, will not likely be deterred.

Cultural and social attitudes toward CCTV have also been recognized as having an impact on CCTV's perceived effect on crime. In Squires' 2002 Ilford Town Centre study, it was found that women were more in favour of CCTV cameras than men, and women also tended to experience more fear of crime. "Public attitudes toward CCTV have a great impact on the degree to which such systems are accepted and effective" (Royal Canadian Mounted Police, 2003: 9-10). Given that different groups respond differently in their acceptance as well as expectations of CCTV, it is important to assess these attitudes and expectations in advance, as well as to be aware of the general trends. In an assessment of the effects of CCTV on crime, Deisman (2003) recommended three caveats for consideration when reviewing CCTV's effect on crime. First, the CCTV system must be viewed as one part of a larger crime control strategy making it extremely difficult to conclude whether any observed changes in crime rates which occurred after its implementation were "casually connected to, or even in any way a consequence of, CCTV coverage" (Royal Canadian Mounted Police, 2003: 11-12). Secondly, changes in crime rates are not necessarily considered a reliable measure of changes in actual incidents. Thirdly, the methodological difficulties associated with comparing individual CCTV systems are a result of not only variations in the set ups and configurations of the systems, but also in their management and monitoring procedures (Royal Canadian Mounted Police, 2003).

More effective measurements of CCTV's effect on crime will provide invaluable information in deciding whether or not to implement CCTV. Deisman (2003) stated that most researchers agreed that CCTV's impact on crime was not the same across crime categories. This suggested that the optimal use of CCTV required ongoing evaluations of

its efficacy not only in areas where it is implemented, but also in outlying areas and with the use of comparable control groups. Indeed, the combination of positive and negative results in attempting to reduce crime suggests that there is an advantage to monitoring the outlaying areas of CCTV locations.

A common justification for the implementation of CCTV in public settings has been based on the premise that these surveillance systems will have a positive effect on reducing fear of crime. For this reason, a general overview of fear of crime as well as CCTV's impact on it is required.

Perception of safety, usually referred to as fear of crime, has been on the increase, while actual crime (according to crime rates) appears to be declining. "Fear of crime has been noted to be more widespread than actual crime, and these two factors have been shown to have little correlation" (Wilson-Doenges, 2000: 600). The concern is also that fear of crime can have as many real consequences as actual crime, in that it can negatively affect quality of life over time, increase individuals likelihood of isolating themselves from social activities, and increase their distrust levels. The problem is compounded by the fact that fear of crime can disrupt an individual's life as much as actual crime can. For example, fear of crime can exacerbate an individual's anxieties and increase social isolation to a crippling degree (Wilson-Doenges, 2000).

> Similarly, McIntyre (1967) researched the significance of fear of crime, finding reductions in social interaction as well as the restriction of activities for those surveyed. "They forego opportunities for pleasure or cultural enrichment, and they become less sociable and more suspicious. The level of interaction and mutual trust in society is reduced; public places become less safe than they otherwise might be" (McIntyre, 1967, as cited in Hartnagel, 1979: 177).

The National Crime Surveys (NCS) of the 1970's focused primarily on victimization and social control perspectives. However, Garofalo and Laub (1978)

focused more on the relationships between the way residents perceived or were affected by quality of life factors in their neighbourhood, such as environment, parking and traffic, noise levels, problems with neighbours, availability of shopping, and schools contributed to their fear of crime. “Consequently, residents who are less satisfied with their neighbourhood’s quality of life will express a greater fear of crime that those who are more satisfied” (Hale, 1979: 13).

Measurement of fear of crime has received considerable debate. Some researchers have defined the construct as it relates to feelings of fear specifically, while others have suggested it not only includes feelings, but also cognitive judgments, such as increased likelihood of victimization, as well as behavioral modifications, such as not walking alone at night (McCrea et al., 2005: 8).

During the 1930’s, interest emerged for the development of social indicators or “socially significant statistically descriptive data about the national well-being of American society, gathered in time series so as to show social trends” (Lee, 2001: 473). By the 1960’s, a huge increase in the scope and types of surveys and studies was occurring. The social movements of the 1960’s began to influence political will and an increase in interest for information about the betterment of society. At the same time, improvement in the gathering of crime data and statistics, especially in terms of victims, began to take shape. Several organizations in the USA in the late 1960’s began to interview individuals about their personal experiences, feelings, and types of victimization with the goal of obtaining more accurate crime data (Gordon and Riger, 1989 as cited by Hale, 1996). “Ironically, if the will to become a more ‘knowable’ society developed in part from the civil rights movements of the 1960’s, so, too, the new

politics of "law and order" and an increase in public desire for tougher laws, stronger policing efforts as well as the punishment of criminals was occurring" (Lee, 2001: 476).

> Since 1970...the motif of 'fear of crime' has taken on a new discursive and bureaucratic importance, to the extent that it is now regarded as a problem in and of itself.... The dynamics of contemporary crime-control policies are increasingly oriented towards reducing fear of crime rather than actual crime and they rely to an increasing extent on populist discourses of potential victims, symbolic politics, and public/community safety initiatives in the production of social order and social control (Hier et al., 2006 as cited in Hier et al., 2007: 745).

From a sociological and psychological research standpoint, fear of crime has been found to influence emotive, cognitive, and behavioural changes specific to many individuals' perception of safety. Other sociological studies have also revealed class issues to be causally implicated in the fear of crime:

> At the societal level, the fear of crime burden may be unfairly placed on those already socially and economically disadvantaged, and without sufficient resources to protect themselves and their possessions or to move from high crime areas (McCrea, Shyy, Western, & Stimson, 2005: 8).

Francisco Klauser (2007) critically assessed the adequacy and limitations of CCTV as a tool to revitalize urban areas suffering from concentrated social disadvantage. Klauser (2007) demonstrated CCTV to be an ineffective tool to revitalize public places characterized by fear because its use was forgotten very quickly, especially in areas of high social dysfunction and crime.

> Based on the general understanding of CCTV as a mediated form of social control, which stands in stark contrast to traditional face-to-face encounters in public space, (Klauser) argues that CCTV both spatially and mentally disconnects the watched (monitored individuals) from the watchers (operators) (Klauser, 2007: 338).

The premise for Klauser's argument was based on three major limitations of CCTV. First, he stated that the short-term results of reductions in crime rates were often

not demonstrated with longer follow-up periods (Armitage, 2002; Welsh and Farrington, 2002; Gill and Spriggs, 2005). Given this, Klauser suggested that people soon forgot that the cameras existed and began to resume their past behaviours. Second, a growing number of CCTV evaluations suggested that the efficiency of CCTV depended strongly on the type of crime being analyzed. For example, CCTV appeared to be most effective in car parks and at reducing vehicle crime (cost-benefit calculations or premeditated crime), with limited effects on vandalism or aggressive behaviour on public transport or within city centre settings (impulsive crime) (Brown, 1995; Welsh and Farrington, 2002; Gill and Spriggs, 2005). Finally, Klauser (2007) described the limitations specific to the functioning systems of CCTV as dependent on a variety of "system-inherent factors, ranging from collaborations between operators to technical dimensions of the cameras..." (Klauser, 2007; 339). According to Akrich and Meadel (1999), CCTV must be considered a dynamic socio-technical construction which is constantly 'in the making' (Klauser, 2007; 339).

What exactly is the fear of crime? Research suggests that the concept of fear of crime has a range of implications and is difficult to measure. The Figgie Report on Fear of Crime (1980) reported that fear was not a one-dimensional concept, but had at least two distinct aspects affecting 70% of the population to some degree (Pollock and Rosenblat, 1984 as cited by Hale, 1996). The report made a useful distinction between formless fear (a vague uneasiness or foreboding about nonspecific threats in the community) and concrete fear (fear of specific violent acts). Formless fear reflected the quality-of-life concepts described by Garofalo and Laub (Hale, 1979).

The development of strategies to address each type of fear is implicitly tied to the technologies of governance. Lee (2001) discussed Foucault's notion of governmentality, drawing a distinction between art and economy in the practice of power. 'Art', as Lee explained, was that which oversaw the evolution of the political system, while 'economy' was aimed at securing the greatest possible return from the investment of power (Foucault, 1991 as cited by Lee, 2001).

> The art of government is premised on the notion that the problem of population can be overcome by the development of a grid of governmental techniques and tactics through which subjects are not only governed, but take on an active role in their own governance.
>
> This sophisticated model of power and governance is instructive in understanding the emergence of 'fear of crime' as a project for the disciplines and as an object of governance, and also the emergence of what I refer to as the fearing subject (Lee, 2001: 470-471).

The way that CCTV affects a community depends on people's assumptions and expectations of its effectiveness and impact. For this reason, it is important that research test the assumptions, measure the levels of support, and analyzes the perceptions and expectations in each of the specific communities where CCTV is being planned as opposed to making generalizations based on the broader population. For example, the British Crime Survey measured fear of crime and levels of reported victimization in the general population and used this information to make broad generalizations in a number of residential CCTV studies in the UK. (Home Office Research Study 292, 2005). As well, 'feelings of safety' or 'worry about crime' have been used by researchers in an effort to demonstrate support for CCTV (Hale 1996; Furstenburg, 1971**)**. "CCTV in the UK enjoys significant public support and year on year, fear of crime surveys state that the public feels safer due to the presence of CCTV" (National CCTV Strategy, 2007: 5).

Other research, such as that conducted by Simmons and Dodd (2003), demonstrated that fear of crime, perception of victimization, and the avoidance of particular areas are all influenced by socio-demographic factors. This supported the assumption that CCTV installation could influence the behaviour of specific segments of the public.

Studies designed to measure support levels for CCTV have shown mixed results. Generally, at least two-thirds of the general population are supportive of CCTV, though this support varies widely across demographic lines. For example, females are more supportive than males (Dixon et al., forthcoming; Honess and Charman, 1992 as cited in Home Office Research Study 292; 2005). Older persons were more supportive that younger respondents (Bennett and Gelsthorpe, 1996**).** However, no relationship has been found between 'worry about being a victim of crime' and support of CCTV (Honess and Charman, 1992**).**

> Few studies have measured respondents' actual knowledge of how CCTV works, and the link between people's level of knowledge and support for CCTV. One study observed that, 'public acceptance is based on limited, and partly inaccurate knowledge of the functions and the capabilities of CCTV systems in public places (Honess and Charman, 1992 as cited in Home Office Research Study 292, 2005: 5**).**
>
> Moreover, there has been relatively little research on how precisely CCTV impacts on individuals. For example, there is some evidence that CCTV in shops causes staff to be less vigilant (Beck and Willis, 1995). Similarly, Dixon et al., (forthcoming) have suggested that CCTV could result in lower levels of social responsibility (Home Office Research Study 292, 2005: 5).

Since Honess and Charman's work (1992), there has not been significant change specific to the public's knowledge of CCTV and their support for it. Spriggs et al. (2005) found that the public remained relatively unaware of the capabilities of CCTV, yet their expectations of its effect on anti-social behaviour and crime were high. Spiggs et al. (2004) found that a clear majority of people believed that CCTV would reduce the

number of people hanging around, encourage people to report more incidents, reduce crime generally, and assist the police in their ability to respond more quickly to incidents. Overall, people felt that CCTV could offer some sort of remedy to community crime related problems.

In research conducted for the Home Office in the UK (2005), researchers carried out evaluations of 89 CCTV sites in 14 different CCTV projects in a range of different settings across England utilizing a combination of methodologies focusing primarily on before and after public attitude surveys. The goals of the research were: to determine the level of effectiveness of CCTV for reducing crime, disorder, and fear of crime; to describe in more detail the impact of CCTV on fear of crime and individual behaviour choices; and to determine features of CCTV systems that determined effectiveness to facilitate the development of comparable research. The research was also designed to measure levels of public support for CCTV prior to its implementation, to provide benchmarks for comparison with the 'after' survey results, to identify groups with specific vulnerabilities to crime and fear of crime, to test the hypothesis that CCTV in residential neighbourhoods would be more resisted on the premise that it invaded privacy, and to measure the expectations and characteristics specific to CCTV as they related to demographics or experience related indicators. Importantly, those areas where CCTV was implemented and subsequently studied were characterized by political and financial influences that might have affected public expectations and attitudes about the use of CCTV surveillance.

> Local politicians were reluctant to miss the opportunity to obtain money available for the installation of CCTV systems. It is clear that they were keen to be seen to be active in a particular area, in order to appease public opinion and address local

> political pressures. The public level of support for CCTV and the belief in its efficacy are central to these driving forces (United Kingdom - Home Office, October, 2005: 2).

In a supplementary report conducted by the Home Office entitled "Police Attitudes of and Use of CCTV" (Levesley and Martin, 2005), police respondents generally viewed CCTV as a very useful tool. It was used as the starting point for enquiries, as well as a cost-effective tool used to speed up investigations and encourage offenders to plead guilty. As well, respondents felt that incidents were brought to their attention that may not have been otherwise. However, police respondents also felt that CCTV increased demands on their workload. Police felt CCTV also served to increase the public's expectations. Overall, however, the increased demand on workload and any negative feelings about the increased expectations were outweighed by the overall benefits of CCTV, such as improved conviction rates, less denial on the part of criminals due to being captured on video, and overall improvements to the evidence gathered (United Kingdom, Home Office Research on-line report, September, 2005).

It is also important to note that the mixed findings on CCTV's effects on fear of crime can be partly attributed to the varied approaches taken in the many research projects. Differences in methodologies, locations, and stages of CCTV implementation were all factors that contributed to the mixed results. Studies have also often been contextually specific and have evaluated single systems in specific sets of circumstances without providing a full analysis of the other factors and their influences, making comparisons across all of the research very difficult (Spriggs et al., 2005). Another key part to the understanding of outside influences and their effects on CCTV is the role that not only public expectations play, but also the existence of publicity, as well as the roles

which the media and politics play on the concept of fear of crime and CCTV's effect on fear of crime. Given this, the next chapter will focus on these factors and their influences on CCTV's emergence, acceptance, and success.

Chapter Three: Publicity, Media, and Political Influences on CCTV

Sherman (1990) recognized the role of publicity in assisting to create an uncertainty of risk, which he referred to as a "free bonus", because publicity's positive effect on deterrence often lasted beyond the period of intervention. Clarke and Weisburd (2008) expanded this notion to describe the broader role that publicity plays in advancing the benefits of an intervention beyond the immediate area of deployment. For example, as noted by Poyner (1988), live cameras were installed in two buses and the others were outfitted with dummy cameras, yet there was a significant reduction in vandalism and graffiti for the entire fleet of buses in the North of England. Poyner (1988) concluded that the substantial reductions in vandalism were the result of the considerable publicity of these new measures, the publication of the apprehension of a number of vandals, and the promotion of the video around the schools in the area. "The children have learned...that the cameras will enable misbehaving individuals to be picked out and that action will be taken. However, what they do not know is how extensive the risk is. They appear to believe that most buses have cameras, or at least they are uncertain about which buses have cameras" (Poyner, 1988:50). Clarke and Weisburd (2008) stated that, even if the reality was then promoted to demonstrate the fact that not all buses were outfitted with the cameras, and the risks were actually far less than initially anticipated, the crime prevention benefits may still have been significant similar to impaired driving interventions.

In an article published by Wade (1998), the downtown core of Baltimore began to explore the use of CCTV cameras in 1995 beginning with the Downtown Partnership of Baltimore project to supplement its Clean and Safe services program. This downtown district had already coordinated private security with police services and transit police to form a safety network; however, there was still a general feeling of fear and uneasiness in the downtown core. Public opinion was split during the initial conceptual phase with the business community favouring the use of cameras and some residents expressing privacy concerns. In the end, the support outweighed the opposition and the cameras were implemented with a very basic and inexpensive surveillance system being installed. According to an opinion survey and marketing campaign, the reaction to the system was said to be "almost unanimous". The Public Safety Director, Frank Russo stated, "It improves the way people feel about the community because there's the impression that someone is paying attention to their safety" (Wade, 1998: S 22). One of the benefits promoted by the project administrators was an improvement in the efficiency of the police department's response within the 16 block core because an officer would see where and what the problems were and, therefore, respond more appropriately. Still, CCTV systems were often implemented with little or no sound empirical research or evaluation processes in place and were often politically driven (Wade, 1998). Coleman and Sim (2000) illustrated the role of the business/elite in establishing and maintaining CCTV surveillance programmes. "Not only does this address consumerism as a significant dimension of public surveillance schemes, but it also suggests that monitoring programmes are tied to relations of power, privilege, and social advantage" (Hier et al.,

2007: 731). Yet, the promotion of CCTV often involves the participation of other non-official groups, such as citizen action groups and the media. As noted by Hier et al.,

> News outlets become important to public CCTV surveillance projects because of the privileged space these media occupy as cultural fields of struggle where contending interests with different levels of power and influence compete to define the nature of problems and issues, as well their preferred solutions. Many studies that address the establishment of public CCTV surveillance systems acknowledge the importance of news media as an arena where powerful groups attempt to secure hegemony (2007: 733).

Hier et al. (2007) examined the role of the media and diverse interest groups in influencing CCTV project success or failure in three different Canadian cities. The first example is London, Ontario whose CCTV project was inspired by the success of the City of Sudbury's "Eye in the Sky Monitoring Program". London's project was implemented with the goal of providing and maintaining a safe environment in the downtown core, as well as to deter crime and to improve the ability of the police to respond to anti-social behaviour and crime (Corporation of the City of London, 2001). At the time of their study, Hier et al. noted that the City of London was responsible for operating the largest camera system in Canada with a total of 16 cameras, an initiative that was a citizen-led initiative following the tragic murder of a 20 year old man named Michael Goldie-Ryder. The murder mobilized the formation of a group called Friends Against Senseless Endings (FASE) and came to symbolize social disorder in the downtown core. FASE was led by the family and friends of the victim whose efforts were successful, within a two-year time frame, in developing enough publicity to raise the money and the levels of support to officially launch what has become known as the Downtown Camera Project (Hier et al., 2007).

> In 1999, members of FASE, in consort with members of the Downtown Safety Committee, initiated a two-year anti-violence campaign that led to the establishment of public CCTV surveillance in downtown London. They succeeded on the basis of a repertoire of political and communications activities. Among these activities were open-forum discussions and presentations to students at local high schools; meetings with national advisory groups, such as the Federation of Canadian Municipalities (whom members of FASE successfully lobbied to demand increased criminal penalties for crimes involving knives); lobbying efforts to persuade the City of London's Community and Protective Services Board to cover outstanding costs for the monitoring programme; and a sustained letter-writing campaign to local news outlets to draw attention to violent crime on London's streets, as well as to FASE's proposed and preferred solutions (Hier et al., 2007: 735).

Soon, the movement that initially aimed to eliminate violence in the downtown core was expanded to include other crimes such as purse snatchings, bank robberies, assaults, and the general safety of women and the elderly. During this effort, Goldie-Ryder's mother also began to work as a media activist who published articles criticising the project's opponents based on an emotional appeal for safety. The Goldie-Ryder tragedy, the development of FASE, and all symbols of social disorder became articulated into the overall problems of risk and danger associated with crime.

> As the reaction to FASE suggests, such responses, and the self-reflexivity they foster, are not based simply on the dissemination of information about crime, but also on the aesthetic and symbolic dimensions to perceptions of crime and disorder that are shaped by emotions such as compassion and sympathy for victims and their families – what Boltanski (1999) conceptualizes as 'distant suffering' (Hier et al., 2007: 736).

In the second city discussed by Hier et al. (2007), the City of Brockville, Ontario was used as an example of a smaller Canadian location where the implication of a public monitoring project was rejected. It also represented the only location that the authors were aware of that CCTV was defeated based on a critical editorial campaign led by journalists which inspired substantial public resistance. In this case, the project was proposed by Brockville Chief of Police Barry King. Chief King applied for provincial

support for a Proceeds of Crime/Frontline Policing grant in the amount of $158,000 to install 8-10 cameras to monitor 15 city blocks in the downtown core. In an interview with Chief King on June 27th, 2005, Hier was advised that King's primary goals for the project were: to reduce the prevalence of break and enter crimes; to lower vandalism; to respond to altercations in the restaurant and bar district; and to identify stolen vehicles and suspects (Hier et al., 2007). In December 1998, King's grant proposal under the Futuristic Crime Prevention Initiative program was approved for $70,000. King then approached the City's Economic Development and Community Services Committee with his Safe Streets project proposal which approved the project in a 2 to 1 vote. Within a few days, the local newspaper, The Recorder and Times, ran a series of opinion articles under the titles of "Is Brockville Ready for Big Brother?" (Philips, 1998), "There's a Better Way to Keep our Downtown Safe" (MacLean, 1998), "Invading Our Spaces" (Coward, 1998), "Cop Better than Camera" (Mather, 1998), "We don't Need Video Surveillance" (Taylor, 1999), and "Cameras Should Be Last Resort" (Recorder and Times, 1999a. as cited by Hier et al., 2007).

Essentially, the editorial committee of the local newspaper took the firm position that video surveillance represented a poor substitute for community policing and formed this opinion, based on the political knowledge of years of struggle between the city council and the Police Board (Hier et al., 2007). The editorial committee also argued that the proposal was not appropriate for the small town dynamics of Brockville, "pitting small-town community privacy against big-city intrusive state surveillance", stating that the project was "big –brother policing as a proxy for the erosion of small-town community living" (Hier et al., 2007). A local criminal lawyer took advantage of the

available column space to criticize the use of CCTV. Letters to the editor also took the position that the project was a "technological quick-fix to address perceived social problems" that represented an "admission of not being able to cope with the problems and a colossal waste of money" (Gillard and Gillard, 1999a; A6 as cited by Hier et al., 2007). The strongest opposition came from the editorial board who wrote, "A living breathing human exercising the good judgement of a well-trained police constable is light years ahead of a student sitting five kilometres away watching through the blinkered lens of a video camera" (Recorder and Times, 1999 as cited by Hier et al., 2007: 739).

The next political step that the proposal was required to take after receiving its initial approval by the Economic Development and Community Services Committee was to gain consent from City Council. The Mayor, Ben TeKemp, had already voiced his support for the proposal and called for council approval following the newspaper articles and editorials. At this point, the city council remained evenly divided on the issue. In the days prior to the meeting, city council members and the Mayor received numerous phone calls from the public voicing strong opposition to the proposal, resulting in an unanimous vote opposing the CCTV proposal at the council meeting. As Mazur and Lee (1993) noted, "news media not only identify issues for public discussion, but also frame the context in which issues and concerns are thought about, represented, contested, and reconfigured" (Hier et al., 2007: 740). Hier et al. summarized the results of this second example as "in the absence of a 'signal crime' or other event that could be used to galvanize public support, there was no resonant moment around which public outrage and fear could mobilize" (Hier et al., 2007: 741).

In their third example, Hier et al. (2007) described a case which demonstrated resistance to the expansion of CCTV surveillance in the City of Peterborough, Ontario. Since 2001, the City has run a public CCTV programme consisting of 12 cameras which monitor the museum, marina, library, and the city's Millennium Park (Peeksker, 2005, as cited by Hier et al., 2007). In December 2003, the Restaurant and Bar Association proposed an expansion of video surveillance to include 24-hour coverage of the city's business and entertainment district and to target vandalism, public urination, graffiti, petty crime, litter, and panhandling (Sherk, 2004). The Association proposed to pay for the equipment and the installation costs at five intersections and recommended that the city pay for the ongoing maintenance and operation of the expanded system. A city staff member named Lance Sherk was assigned the task of conducting a comprehensive assessment and to provide specific recommendations based on the two public consultation processes held. The first session consisted of a series of four public information forums which attracted between 15-30 people. The second was a survey of business and property owners in the downtown core which resulted in a 12% return rate revealing that 83% of respondents were in favour. A second distribution of the survey to the Peterborough Chamber of Commerce resulted in a 6% response rate among the 820 members with 80% being in favour. Over the four-month period of consultation, one principle interest group emerged, the Stop the Cameras Coalition (STCC), comprised of representatives from the Social Justice Coalition, the Peterborough New Democratic Party, and the Peterborough Coalition Against Poverty. This group worked to effectively sway public opinion which was predominantly in favour of the proposal initially, building public resistance to the expansion proposal by citing a flawed community

consultation process and a lack of realistic long-term costs for the system's operation. Given the growing opposition, Sherk's final recommendation to council was the formation of a stakeholder committee comprised of STCC and other representatives with the aim of investigating alternatives to cameras, to further define the need for monitoring, and, if cameras were to be become the agreed upon course of action, how they were to be implemented (Sherk, 2004 as cited by Hier et al., 2007). Hier et al. (2007) noted that, at the time of their writing, the committee had met only once and had failed to reach agreement.

Hier et al. (2007) used these three case studies to argue that non-official sources often played very active and important roles in defining public policy. Garland (2001) argued that a more generalized crime complex was developing which involved new ways of acting on growing levels of fear of crime and concerns for public safety.

> David Garland (2001) identifies two broad, interrelated sets of changes taking place in contemporary modes of criminal justice administration. The first pertains to changes in the political culture of crime control. He contends that the last few decades have been marked by an increase in the 'emotionalization' of crime, characterized by discourse of victim-centeredness and 'social defense', as well as the prioritization of situational crime prevention as predominant rationalities for crime control and criminal governance (Hier et al., 2006 as cited in Hier et al., 2007: 742).

What is apparent from the research cited above is that the emotionalization of a signal crime does not necessarily ensure the development of policy or decisions specific to CCTV implementation; the exact opposite can also occur. In fact, the emotionalized citizen can oppose the substitution of a police officer with a camera just as much as the mother of a murdered son can mobilize a city to implement an unprecedented number of surveillance cameras. In either case, CCTV's perceived efficacy, or lack thereof, can

determine how perceptions about crime, and the related emotionality about the efforts being undertaken to prevent crime, are expressed. The challenges of measuring the public perception of CCTV relates, in many ways, to the same variety of environmental determinants and demographics that influence how citizens understand and perceive crime. The local media, action groups, and the presence or absence of a specific incident can all assist or counter the popular perception of CCTV as a remedy to crime. Because public perception is such a major determinant in CCTV's capacity to reduce perceptions about the level of crime, any assessment of this technology's success must consider the local role of publicity and politics in their presentation of CCTV. Similarly, public perception is paramount to ensure that CCTV's implementation is a welcomed measure of security, particularly insofar as this technology is or is not viewed as an intrusion upon privacy. As noted in the Canadian Office of the Privacy Commissioner's report (2006), the rapid advancements in the use of video technology in both the private and public sector, and the growing perception that the use of video surveillance increases security, have posed very real threats to privacy, freedom of movement, and freedom of association.

As noted by Norris et al., (2004), the political appeal of CCTV has often had less to do with its proven ability to reduce crime or fear of crime than the image and impression that the implementation of CCTV has for demonstrating that something is being done about the problem of crime. In the early 1990's, the mass expansion of state funded CCTV in Britain occurred before any systematic evaluation of whether or not it effectively reduced, prevented, or deterred crime. Overall, a number of small scale evaluations produced varying and often contradictory results (Norris et al., 2004). And,

as Pawson and Tilley outlined (1994), politicians relied on the self-interested claims of practitioners and system promoters. In Welsh and Farrington's 2004 analysis of 22 British and American evaluations which met their minimum requirements of scientific adequacy, the authors concluded that CCTV had a significant desirable effect on crime, although the overall reduction was only 4%. And, while this may initially have looked like an endorsement of CCTV, it is worth noting that only half of the studies showed a positive effect on crime levels. The study further stated that CCTV had little or no effect on crime in city center and public transport settings. The only statistically significant results were found in car parks (Norris et al., 2004). At different moments or as a result of various tragedies, CCTV has often been offered as the quick solution to public outcries about crime, terrorism, or shocking classroom murders. For example, in the U.S., Britain, and Russia, the response to killings in the classroom has resulted in a widespread introduction of CCTV in public school systems. Yet, the extent to which this approach works to prevent further tragedies is questionable. "For politicians there is a need to be seen to be doing something. And, as the psychological, social, or political conditions that give rise to such incidents are complex, and possibly intractable, technological fixes which promise the appearance, if not the reality of security are highly appealing" (Norris et al., 2004: 126). History has demonstrated that when significant incidents and crises occur, funding will be made available for CCTV despite the contradictory or lack of evidence of their effectiveness. This often occurs in the context of setting aside considerations of the effects of CCTV on legal, constitutional, or rights to privacy. When the argument is between security and civil liberties, often security is favoured. Given this, the next chapter will look more closely at the issue of privacy and CCTV.

Chapter Four: Privacy Issues of CCTV

One of the primary arguments against the use of public video surveillance systems is the challenge these systems pose to citizens' privacy rights and civil liberties. The use of camera surveillance subjects everyone to scrutiny, whether they have committed a crime or not, and, "in the very least it circumscribes, if it does not eradicate outright, the expectation of privacy and anonymity that we have as we go about our daily business" (Government of Canada, Office of the Privacy Commissioner, March 2006: 1). To further complicate the issue, different countries have different legal systems and interpretations on the concept of 'right to privacy', making comparisons, standardization, and unified expectations difficult. For example, in Britain, where CCTV is most prominent, the legal context is considered to be extremely permissive. Britain has no written constitution and until the incorporation of the Human Rights Act into British Law in the late 1990's, no statutory provision existed for the protection of privacy. This has resulted in a situation where no legal or constitutional apparatus exists to inhibit or challenge CCTV system development. "Both the new Data Protection and Human Rights Acts have been toothless to prevent the expansion of CCTV and very weak at regulating it once in place" (Norris et al., 2004: 121). While not the case in Britain, the expansion of CCTV in other countries has typically been slowed by their legal and constitutional environments. For example, in Germany, the Constitutional Court stated that "the knowledge of being under surveillance, why and by whom is crucial for a democratic society and the autonomy of its citizens" (Topfel, Hemple, & Cameron, 2003: 6). A similar position exists in Denmark where there is a "general legal presumption against the surveillance of public space by private bodies, and the explicit regulation of the use of photography by the

police" (Norris et al., 2004: 121). As well, Norway's privacy rights are protected by their constitution and a strong data regime that strictly regulates CCTV through a licensing requirement. Similarly, in Canada, the Supreme Court declared that to "permit unrestricted video surveillance by agents of the state would seriously diminish the degree of privacy we can reasonably expect to enjoy in a free society" (cited in Deisman, 2003: 18). In the United States, CCTV has expanded very quickly in the private sector and, since 9/11, into public spaces. According to the Constitution Project's Guidelines for Public Video Surveillance, surveillance systems in the public realm impact many fundamental values, including privacy and anonymity, freedom of expression and association, government accountability and procedural safeguards, and equal protection and anti-discrimination (Report of the Constitution Project's Liberty and Security Committee, 2007).

According to the Office of the Privacy Commissioner of Hong Kong's report (2003), an overview of the merits of various countries' policies specific to the use of CCTV was provided. One conclusion was:

> The jurisdiction that has probably been most proactive in terms of regulating the use of public surveillance cameras is the State of New South Wales ("NSW") in Australia. In 1998, the NSW state government passed the Workplace Surveillance Act. Although this act does not explicitly address the use of surveillance cameras in public places, it did result in a NSW government initiative. In 2000, NSW issued a Government Policy Statement and Guidelines for the Establishment and Implementation of CCTV in Public Places the substance of which was derived from the 1998 legislation. More importantly, it led to the NSW police issuing a Police Service Policy on the Development and Use of CCTV which explicitly states that the NSW police will neither fund nor operate CCTV equipment that may be used in the detection or prevention of crime (Report by the Office of the Privacy Commissioner for Personal Data - Hong Kong SAR, 2003: 4).

This statement was further clarified in the Hong Hong report with a footnote stating that, the police service in Australia will not routinely monitor CCTV cameras, and that the role of the police service would be to respond to the incidents as identified by control room operators, or in specific cases such as in emergency situations, the police could monitor for specific incidents to determine the appropriate response (Report by the Office of the Privacy Commissioner for Personal Data - Hong Kong SAR, 2003).

The legal concern for the protection of privacy rights faces new challenges in light of CCTV's recent technological advances. One concern for individual privacy came from the aftermath of the bombings on London's subway and bus system in July 2005, where, despite using CCTV for the efficient identification of the bombers, British authorities stated that an awareness and responsibility of meeting the requirements of the justice system, such as those considered fundamental values in other democratic countries, including freedom of expression, association, non-discriminatory practice, and government accountability, will become an imperative component to ensuring CCTV's continued success. "It should be our collective aim and responsibility to ensure that, as well as the need to keep up with technical developments in the industry as a whole, improvements in provision remain consistent with the requirements of the CJS and with the needs of the Court Service in particular" (Home Office; National CCTV Strategy, October 2007: 4). In response, the Home Office published a report bringing attention to the advances in technology and the legal balance between data protection, privacy, and human rights legislation. "Recognising data protection and privacy rights in the operation of all systems is not only important because the law requires us to do so, but also that it is

right that we should do so, with concerns about surveillance so apparent in our everyday lives" (Home Office; National CCTV Strategy, October 2007: 4).

Despite this new recognition of privacy and individuals rights and freedoms, the UK's implementation of CCTV in the area of public safety and investigation has taken place in an unplanned and "piecemeal fashion with little strategic direction, control, or regulation" (Home Office; National CCTV Strategy, October 2007: 5). One key contributing factor to this was the "involvement of the central government in committing over a billion pounds to facilitate the deployment of open street CCTV" (Norris et al., 2004: 122). Norris et al., stated that not only was it the amount of funding available, but also the manner in which it was allocated that lead to the piecemeal and rapid growth. In effect, the funding was distributed using a competitive bidding process which stimulated a demand beyond the initial limits of the funding. Projects were to involve partnerships between the police, local business elites, and local authorities which effectively created powerful alliances committed to the installation of CCTV regardless of the outcome of the competitive process. This resulted in many groups who were not initially funded finding alternative sources of funding or to lobby for another round of competition (Norris et al., 2004). In a report submitted to the Home Office, the Association of Chief Police Officers (ACPO) proposed new managerial standards to improve the organization of CCTV; among these standards were those pertaining to the protection of individual privacy rights, such as the need for clear guidelines on registration, inspection, and enforcement, as well as a unified standardization of storage, archiving, and retention of information acquired through CCTV (Home Office; National CCTV Strategy, October 2007).

Compared to the UK, the US has progressed very well in the area of developing guidelines specific to ensuring that individual rights are not violated by CCTV systems. This progress can, in part, be attributed to the libertarian culture of America, in which privacy advocates believe the use of widespread and on-going government surveillance poses a serious threat to a society that prides itself on individual rights, autonomy, and freedom from government intrusion (Report of the Constitution Project's Liberty and Security Committee, 2007). One indication of this progress is the existence of the Constitution Project, a liberty and security committee of a bipartisan, non-profit organization who published a document entitled "Guidelines for Public Video Surveillance - A guide to protecting communities and preserving civil liberties" in 2007. This organization seeks consensus on controversial legal and political issues through scholarship and advocacy. The intent of the guidelines outlined in the report were to assist state and local officials responsible for designing, authorizing, and managing public video surveillance systems. The guidelines were intended to "meet the challenge of reconciling Americans' strong and legitimate interest in protection against terrorism and other dangers with their longstanding and constitutionally-enshrined commitment to individual freedom" (Report of the Constitution Project's Liberty and Security Committee, 2007: xii). Specific recommendations addressed the potential for violating privacy rights through the technological developments being made in CCTV, which, as noted in the introductory section of this paper, include observation technologies, recording technologies, tracking technologies, and identification technologies. The report also included a final section addressing enhancements which may be implemented to offset the negative effect of surveillance on constitutional rights and values, including the

rights of privacy, freedom of expression, and freedom of association. New technologies have also emerged that can alleviate some of the invasive effects of the technology. For instance, camera systems can be set up to not pan, tilt, or zoom in ways that capture private spaces, such as into windows or private residences. In a similar way, technology, such as 'digital masking', can hide faces of individuals not being targeted or specifically observed. Other measures included protecting recorded data from easy disclosure or access through encryptions or "watermarks" which either restrict access to data or record when and where the data was last accessed (Report of the Constitution Project's Liberty and Security Committee, 2007). The guidelines document also provided a list of established mechanisms to protect the rights of identifiable individuals captured on video surveillance. These mechanisms include: notice and awareness – the community should be made aware if a system exists and how it collects, possesses, or uses personally identifiable information from video surveillance; consent – use or sharing of information collected by a video surveillance system outside its intended purpose should only be done if consent to do so has been obtained by the individual or in such a way as to not reveal the identification of the person, if consent is not provided; access and participation – individuals should have the right to request access to their identified appearances and have an opportunity to amend or correct any errors or inaccuracies; and integrity and security – authorities must take precautions to secure all data (Report of the Constitution Project's Liberty and Security Committee, 2007). As noted in the previous chapter, non-official sources, such as victims, the media, and politicians can often play very active and important roles in defining public policy. As such, they can also be key participants in ensuring that the technologies are "designed and used to not only protect citizens against

crime and terrorism, but also in ways that preserve accountability, procedural safeguards, and constitutionally protected rights of privacy, freedom of expression, and freedom of association" (Report of the Constitution Project's Liberty and Security Committee, 2007: 36).

The Constitution Project suggested that CCTV be implemented only to further a clearly articulated law enforcement purpose, and that all assessments of CCTV's effect on constitutional rights accompany any use of this technology so that measures can be taken against its misuse or abuse. To ensure public awareness of CCTV's presence and its potential effect, any decision to use public video surveillance should be made in an open and publicly accountable process. Such a process would require, especially in the case of permanent or long-term public video surveillance systems, a civil liberties impact assessment and overall cost-benefit analysis that included community input. The Constitution Project recommended that those responsible for the temporary implementation of CCTV demonstrate to a neutral magistrate that the system had no greater scope or capabilities than were reasonably necessary to achieve a legitimate law enforcement purpose. The Constitution Project's Liberty and Security Initiative recommended to law and decision makers at all levels of government that they carefully assess the design and use of the potentially dangerous new technologies of surveillance. As such, they provided the guidelines as a "useful framework for protecting core constitutional freedoms and social values in a world of technologically-assisted law enforcement and real, serious threats to public safety" (Report of the Constitution Project's Liberty and Security Committee, 2007: 36).

In a similar effort, the Canadian Office of the Privacy Commissioner (OPC) developed extensive guidelines in an effort to evaluate whether a system was justified, from its planning phases through to implementation and evaluation, to limit the risk to privacy and individual rights (Government of Canada, Office of the Privacy Commissioner Guidelines, March, 2006). The OPC guidelines were developed by a working group comprised of representatives from stakeholder groups, RCMP, and OPC personnel as a result of a 2001 investigation specific to the use of video cameras in Kelowna, British Columbia (Government of Canada, Office of the Privacy Commissioner Guidelines, March, 2006).

As a result of the investigations of video surveillance activities by the Federal Privacy Commissioner of the Royal Canadian Mounted Police (RCMP) in Kelowna, a press release was published in Ottawa in the form of a letter from The Privacy Commissioner of Canada, George Radwanski, to David Loukidelis, Information and Privacy Commissioner of British Columbia. The letter provided a detailed argument supporting a finding that the cameras in Kelowna were in contravention to the Privacy Act. From the perspective of privacy rights, video surveillance by the state can only be justified when it was demonstrated that keeping the peace could not be accomplished by any other less privacy-invasive means. Solid evidence is required in each case to justify the use of generalized video surveillance, rather than other traditional means of law enforcement. Convenience, efficiency, or cost savings should never qualify as evidence. Video surveillance of Canadians by the state should be the very rare exception, not the norm (Government of Canada, Office of the Privacy Commissioner, 2001).

In a report conducted by the Office of the Privacy Commissioner in Hong Kong (2003), the Kelowna case was outlined because of the proceedings which ensued when the Canadian Federal Privacy Commissioner became involved in litigation with the Royal Canadian Mounted Police (RCMP) in British Columbia. The conflict over the Kelowna CCTV system began on June 25, 2001, after British Columbia's Information and Privacy commissioner complained about the cameras to the federal Privacy Commissioner. As noted in the 2003 report, the Privacy Commissioner sought legal counsel and filed an action in British Columbia's Supreme Court in an effort to obtain a ruling which would instruct the RCMP to decommission public surveillance cameras in the City of Kelowna. The Commissioner's case was based on the position that the surveillance of law-abiding citizens in public places by the RCMP was unconstitutional and in contravention of the Canadian Charter of Rights and Freedoms. The Canadian Commissioner announcd that, in his opinion, the RCMP, in their surveillance activities in Kelowna, violated international covenants on human rights (Report by the Office of the Privacy Commissioner for Personal Data - Hong Kong SAR, 2003: 4).

> Privacy is a fundamental human right, recognized as such by the United Nations. The level and quality of privacy in our country risks being struck a crippling, irreparable blow if we allow ourselves to become subjected to constant, unrelenting surveillance and observation through the lens of proliferating video cameras controlled by the police or any other agents of the state (Government of Canada, Office of the Privacy Commission, 2001).

As noted on the Canadian Broadcast Corporation's (CBC) website, the B.C. Supreme Court refused to hear the case, stating that the Privacy Commissioner had exceeded his jurisdiction and the lawsuit was withdrawn (Retrieved September 12, 2008 http://www.cbc.ca/news/background/cdnsecurity/cameras.html).

The Canadian guidelines developed as part of the legislative response to Kelowna's (2001) CCTV use were specifically limited to public surveillance systems primarily used in parks and on streets. These guidelines applied to "overt general video surveillance by law enforcement agencies—what some police forces refer to as 'community cameras'—in places to which the public has largely free and unrestricted access, such as streets or public parks" (Retrieved June 15, 2007 from http://www.privcom.gc.ca/information/guide/vs_060301_e.asp). They also concerned the "continuous or periodic video recording, observing, or monitoring of individuals in open, public spaces, in the absence of particularized suspicion of an individual or individuals" (Government of Canada, Office of the Privacy Commission, 2001: http://www.privcom.gc.ca/information/guide/vs_060301_e.asp). The guidelines were not intended to interfere with the work and decisions of either the RCMP or the OPC and specifically recognized the importance for autonomous decision making to remain in place for both agencies in order to continue to carry out their respective duties (Government of Canada, Office of the Privacy Commission, 2001).

Like the Constitution Project, the Canadian guidelines insisted that public surveillance be used only under pressing circumstances, such as in areas of high crime, where other interventions have failed, or in cases of potential threats to national security, such as at borders. The guidelines also specified that consideration of the effect of CCTV on individual rights to privacy, as well as a process of public consultation, should be undertaken before CCTV was implemented. The public must be notified of the surveillance, and all laws applying to the collection and distribution of Canadians' personal information must be applied equally to all data acquired through the use of

CCTV. Operators of CCTV must be aware of and trained to protect citizens' rights to privacy. The Canadian guidelines also recommended the regular evaluation and auditing of public surveillance systems by independent parties to ensure there was a sustained need for its usage (Government of Canada, Office of the Privacy Commissioner, 2001).

At the provincial level, a document entitled, "Public Surveillance System Guidelines – Office of the Information & Privacy Commissioner for B.C.", written in January 2001, included a model privacy impact assessment and a blank assessment form for use by public bodies. This Privacy Impact Assessment form was intended to determine how a proposed video surveillance system might effect privacy. According to its protocols, the document, along with a detailed business plan, must be submitted to the Office of the Information and Privacy Commissioner of B.C. "well before any final decision is made to proceed with surveillance" (Government of Canada, Office of the Privacy Commission, 2001:5).

An example of municipally orchestrated guidelines for the preservation of citizens' rights to privacy is the City of Toronto, Ontario which began to investigate the use of public safety cameras in February 2006. As a result of the research, which included public consultations, a review of best practices, and Privacy guidelines, a document entitled "Toronto Police Service - Public Space Cameras" was released in April 2007. The document provided a detailed overview of the city's camera program decision making process, program criteria and rationale, photos of cameras and samples of signage, a list of specific deployment locations, recording and observation policies, next steps, and contacts for more information. A second document outlined answers to

frequently asked questions. Both documents remain available to the public and can be found on the Toronto Police Service website (Toronto Police Service, April 2007). The importance or value of these guidelines is the development of processes used to provide a level of consistency across systems. In turn, this allows for a simplified approach or reference document for agencies considering CCTV implementation and enables the establishment of base line data for research or comparison purposes.

In a dedicated effort to ensure privacy concerns are respected, the Canadian OPC has developed the following recommended 15 guidelines for consideration in the development, deployment, and management of CCTV systems in Canada (Government of Canada, Office of the Privacy Commission, 2001: http://www.privcom.gc.ca/information/guide/vs_060301_e.asp).

1. Video surveillance should only be deployed to address a real, pressing, and substantial problem, backed up with evidence based on crime statistics, an evaluation of risks, and specified incidents of public safety concerns, crime, or compelling circumstance.
2. Video surveillance should be viewed as an exceptional step, only to be implemented in circumstances where other, less privacy-invasive alternatives have been exhausted.
3. The impact on privacy of the video surveillance system should be assessed prior to implementation utilizing a tool such as the Privacy Impact Assessment forms made available through the OPC website in an effort to determine the potential actual degree of interference with privacy which may result, or any adverse effects that may be prevented or reduced.
4. Public consultation with all relevant stakeholders should be conducted prior to any decision for video surveillance implementation. The potentially affected community should be broadly understood and defined to extend beyond just geographical boundaries; one group should not be presumed to speak for all others.
5. Video surveillance must only be applied according to all applicable laws, including those within the Canadian Charter of Rights and Freedoms and Quebec's Charter of Human Rights and Freedoms.

6. The video surveillance system should be streamlined to ensure a minimal impact on privacy. For example, operational limitations on times of day, event specific intervals, and peak periods could be considered.

7. The public should be notified and advised that video surveillance is in operation and that they may be subject to scrutiny. This should be done with clearly written signage at the perimeter of areas under surveillance and should also indicate who is responsible for the surveillance, including statements of compliance with privacy principles and who to contact for more information or questions about the system.

8. All information gathered through video surveillance should be minimal, its use and retention should be restricted, its disclosure controlled, and its destruction guaranteed. If the camera is to be manned by an operator, it should only be turned on in the event of an observed or suspected infraction. If the camera is to be running continuously, the images should be kept for a limited period of time according to a specified retention schedule, unless they have documented a suspected infraction or are for use in a criminal investigation that has been reported to the police. The collected information must be only used according to its specified purpose as outlined by the police force or public authority in an explicitly stated policy (see point 14) and all release of information should be documented.

9. Surveillance should not extend into areas where an expectation of privacy exists, such as into windows, showers, washrooms, and change rooms. If a camera can be adjusted by an operator, reasonable steps should be taken to ensure the camera cannot be manipulated to capture images in areas other than within their intended use.

10. System operators should be trained with management systems in place according to specific expectations and rules designed to ensure the protection of privacy.

11. There must be an assurance of security of the equipment and images with limited access to only authorized individuals as specified in writing according to the developed policy (see point 14). As well, recordings should be securely held and access granted on a need-to-know basis only.

12. The right for individuals to have access to their personal information should be respected, and policies and procedures must be in place to ensure it. An understanding that it may also be necessary to blur or block out the image of others captured at the same time must also be ensured.

13. Processes for independent, regular, and frequent audits and evaluation of the video surveillance system should be in place to identify any unintended negative effects of the system. Evaluations should include a comparison of the reasons the surveillance was implemented with how it is being utilized to ensure that it is only addressing the specified problem. Evaluations might also

determine that the system can be terminated for reasons, such as it is no longer required or because it does not meet its outlined purpose. Evaluations should also take into consideration the input from a variety of groups within as well as outside of the community affected by the surveillance and results of audits and evaluations should be made available to the public.

14. Explicit policies should govern the use of the video surveillance. The policy must be in writing and should clearly outline the rationale and purpose of the system, the location and field of vision of the equipment, the rationale and purpose of each specific location and selected fields of vision, which personnel are authorized to operate the system, the times the surveillance will be in effect, when the surveillance will take place, the place where the signals from the equipment will be monitored and received, and the fair information principles which will apply to the recordings, including their security, use, disclosure, retention, destruction, rights to access, and rights to challenge. As well, the policy should clearly designate who is responsible for privacy compliance and privacy rights associated with the system. Compliance to policy by officers, employees, and contractors, and sanctions for non-compliance should be outlined within the policy. Additionally, processes should be outlined in the event of a breach to security or privacy, as well as for requests to challenge compliance with the policy.

15. Police forces and public authorities should be prepared to provide the public with access to information about surveillance systems upon request, including what information has been captured, what the images are used for, who has access, and how long the images are retained.

With organizations at the municipal, provincial, and federal levels endeavouring to guide the implementation of CCTV in ways which preserve individual rights, Canada's present situation of public surveillance can be summarized as one in which the increasing powers to invade privacy are faced with the counter-measures focusing on citizens' rights. Although a context of improved technological abilities, and the public's perception of the quality and quantity of crime, have promoted the view that an increasingly monitored society is warranted, this context of ability and concern has not eroded Canada's prioritization of privacy. According to the Canadian Broadcast Corporation's on-line article, even though the evidence appears controversial, Canadians remain optimistic about the potential advantages of CCTV. At the same time, Canadians

are sensitive to the possible privacy implications that surveillance systems can provoke (CBC, retrieved September 12 2008; http://www.cbc.ca/news/background/cdnsecurity/cameras.html). As such, the development of effective management of the systems will be a crucial component of a successful CCTV implementation plan or proposal. For example, the physical setting and planned purpose of the camera technology plays a large part in determining how the system is implemented. If the system is to be used in public streets, consideration must be given to advising the public of its existence. As well, guidelines must be established for the management of the data, the processes and procedures for monitoring the system, the training and screening of personnel, and the procedures for how to manage a suspicious event. It is also recommended that each camera application be treated as a unique entity, yet planned according to a consistent set of guiding principles (International Association of Chiefs of Police Executive Brief, 2001). Processes and procedures for screening and training of staff specific to the use of the technology, as well as the liabilities, should also be well planned and consistently implemented. As such, appropriate and regular training is a mandatory component of well managed CCTV systems. The training should be ongoing and should occur on a variety of topics, including public perception, changing technologies, industry trends, evaluation, and operations. Training also serves to ensure the system is being properly managed and utilized, and allows for regular evaluation and performance reviews (International Association of Chiefs of Police Executive Brief Executive Brief, 2001). Given the complexities and potential for privacy concerns, it is imperative that systems be implemented and managed with comprehensive strategies, plans, and policies in place. For these reasons, the next chapter provides a more in-depth

examination of the operational and management considerations for CCTV implementation.

Chapter Five: Operational and Management Considerations

As outlined in the National CCTV Strategy in the UK (2007), the use of CCTV in policing services is a tool that "today provides a higher percentage of investigational evidence than any other form" (National CCTV Strategy, 2007: 21). The report also noted that the rapid and 'piecemeal' development of systems throughout Britain was done with little or no control, regulation, or strategic direction which resulted in a "pressing need to examine existing standards, procedures, training, and methods of operation" (National CCTV Strategy, 2007: 5). Additionally, the police, system operators, and courts are faced with the challenges associated with the systems being changed over from analogue to digital technology. Prior to the change in technology, the use of analogue tapes required officers to be trained in retrieving and compiling evidence. The more recent technological change to digital systems has transformed a formerly simple task into an even more diverse and involved process requiring new technical skills, increased levels of awareness, and an advanced understanding of the specifics of the system given its range of complexities and capabilities (National CCTV Strategy, 2007). Furthermore, the uncoordinated approach which occurred in the development of CCTV systems in Britain presented challenges in terms of system compatibility, the cost of assessing images, and limitations in overall system effectiveness (National CCTV Strategy, 2007: 5). Given the growing use of CCTV technology in criminal prosecutions, all of the standards, details of the procedures, and expanded levels of training must be complementary to ensure that the entire process, ranging from the earliest stage of evidence capture, to the criminal proceedings are to the highest standards (National CCTV Strategy, 2007). In addition to the police, the camera operators, system analysts,

program managers, and staff at all levels of CCTV operations must attain and maintain the training and enhanced skills necessary to perform their job functions, especially given that the system should be expected to continue to evolve and change as the technology develops. The Home Office and the Association of Chief Police Officers (ACPO) in the UK have recognized in their joint report entitled `National CCTV Strategy` (2007) that, to date, there has been inadequate training of staff at all levels specific to the CCTV applications across England. The report stated that there was no consistent training and standards in place for CCTV staff. And, while it may seem an obvious component of a sound program or strategy, the report stated that "... the proper training for all users of CCTV is crucial to its successful deployment and effective use" (National CCTV Strategy, 2007: 21).

> A system can be rendered ineffective if the system user is unsure how to fully use the system, and of what relevance the images might be. Further, the inadequate, and, in many respects, total lack of training for operators mean that some systems and software applications installed in the control rooms are seldom or never used. It is clear that in many cases, CCTV is not being used to its full advantage (National CCTV Strategy, 2007: 21).

In the UK, the Security Industry Authority (SIA) developed a licensing process which came into effect on March 20, 2006. The effect of this licensing process was that all front-line workers were required to receive and maintain training standards appropriate to their level of work. The legislation addressed minimum training standards and the 'Skills for Security National Occupational Standards' which led to improvements and higher standards for security consultants and CCTV operators given that operators were now expected to attain and maintain a standardized skill set and a specified level of understanding. It essentially became illegal to work as a CCTV operator without maintaining a valid SIA licence. This requirement resulted in all front-line staff being

expected to achieve the training requirement, and resulted in an increased skill level among employees (National CCTV Strategy, 2007). However, this new expectation was not extended to police officers. During the consultation phase, police officers, most of who were working regularly with CCTV footage and in close consultation with control room staff, received no formal training. It was noted in the National Strategy report that the relationship between police officers and control room staff was an important one and the recommendation was made to ensure it was further strengthened and developed in order to achieve the maximum benefit for evidence gathering and successful deployment (National CCTV Strategy, 2007). Critically, if the police were not included in the licensing and training standards, further gaps could develop in the skills of those working with CCTV resulting in potential miscommunication, a possible lack of knowledge of potential areas of concern or system capability, and potentially an overall underutilization of the CCTV system. An example of this would be in the case of images being transferred from one system to another. If staff within each agency are not equally qualified, the potential of miscommunication, misunderstanding, or a disparity of expectations could occur. Another identified challenge with the current licensing process was that not all staff within the control room were required to receive the training. Yet, in other cases, some control room managers chose to extend the training opportunities to all staff. The result of this flexibility in management was that some CCTV sites had a greater percentage of trained personnel across a larger number of staffing levels than others, thus creating an imbalance. The problem with this was that inconsistency across systems made comparisons, evaluations, and links incomplete. Another disparity between CCTV operations in the new training model was that, under the current legislation,

standards could not be applied to CCTV installers, yet they were recognized as a key part of the overall system. As well, CCTV managers may not have experience with this technology resulting in a lack of understanding of the training issues and needs "which in turn create a disparity in the resources and training opportunities that are open to CCTV staff from one control room to another" (National CCTV Strategy, 2007: 22). Finally, because a number of different agencies were working on training and the development of training standards, there was an identified need to bring these agencies together to evaluate their proposals and examine their separate findings. From the evidence gathered by the research team of the National Strategy in 2007, it was clear that cooperation, engagement, and communication were key characteristics of an effective CCTV partnership. For this reason, it is imperative that all stakeholders be identified and invited into the engagement process in order to achieve optimum results not only for each system, but across systems, as well as nationally. Ideally, a multi-agency approach must be implemented. (National CCTV Strategy, 2007). Additionally, according to the International Association of Chiefs of Police (IACP), the local prosecutor's office should also be involved in the communication, education, and consultation phases in order to provide specific advice on how the use of the cameras and their technology to increase the chances of a successful prosecution. Similarly, if the cameras are intended to be utilized to monitor public spaces, consideration should be given to notify and involve the public in the consultation (International Association of Chiefs of Police Executive Brief Executive Brief, 2001). Ideally, public involvement, discussion, and education are necessary steps in the development of a successful CCTV implementation plan. Although the number of system administrators who have a clear process of surveying public

expectations and measuring responses after implementation is uncertain, both forms of assessment are recommended. For example, if a general survey indicated that people believed CCTV systems would reduce crime, it would makes sense for decision makers to measure levels of crime prior to implementation and at regular evaluation points to determine if the expectation was being achieved. These results should also be communicated to the public at regular intervals to maintain their support for and awareness of the system. Another potential complication identified by the National Strategy committee in the UK (2007) was that no one model or agency held responsibility "for developing the integrated use of CCTV at either the local or national level. It was agreed that a strategic direction is needed to ensure the coordinated growth of CCTV" (National CCTV Strategy, 2007: 44).

Beyond the considerations required for training, consultation, and the existence of a body to administer CCTV both locally and nationally, the UK National Strategy report also identified a need for the development of clearly articulated policies concerning the type of equipment being used, who would be responsible for operating the system, and the overall procedures of operation. Details specific to tape storage and handling must also be considered. "According to some legal experts, many questions surround the storage and maintenance of information, including whether tapes are reused and how soon they can be erased" (IACP Executive Brief, 2001: 9). In 2000, a survey conducted by the International Association of Chiefs of Police (IACP) gathered information from over 200 US law enforcement agencies across the country with the goal of ascertaining current applications of CCTV and video surveillance technology to assess its effect in the field. The survey, as outlined in their executive brief dated March 2001, found that many

police officers using CCTV technology occupied the dual roles of operations and administration, which included operating, maintaining, collecting, storing, and disposing of CCTV tapes (IACP Executive Brief Executive Brief, 2001). "Eighty-one percent of police departments use numeric records to store and track videotapes. Fifty-seven percent record over tapes one to ten times before discarding them, and seventy-one percent store tapes for more than 30 days" (International Association of Chiefs of Police Executive Brief Executive Brief, 2001: 9). The potential problems with this could involve privacy concerns over how long information is held, and the likelihood of an increase in potential misuse or error as the length of time increases. The IACP research (2001) also determined that policy was not keeping pace with the increasingly varied use of CCTV. This finding was based on 53% of survey respondents expressing the need for policy to assist them with decision making (International Association of Chiefs of Police Executive Brief Executive Brief, 2001). As a result of this expressed need, many agencies have designed guidelines of operation on their own without collaboration or information sharing between agencies (International Association of Chiefs of Police Executive Brief Executive Brief, 2001). It is also evident that some agencies utilized ideas from what works in other jurisdictions, while others developed their own operating procedures without a clear idea of what they really needed or should consider given their unique settings. Ideally, a set of recommendations or sample guidelines would assist agencies in selecting or utilizing the ideas best suited to their needs.

> The IACP, in collaboration with the Security Industry Association (SIA), hosted a two-day summit called CCTV for Public Safety and Community Policing in April 1999. Guidelines relating to responsible use of CCTV in public safety and community policing applications were proposed. These guidelines were circulated to law enforcement agencies and CCTV manufacturers across the United States

for review and comments (International Association of Chiefs of Police Executive Brief Executive Brief: 10).

The jointly developed guidelines recommended that CCTV be implemented with the community, local government, and the enforcement agency's involvement in the location of installation. All three of these parties need to understand CCTV's function. The IACP believed that a program oversight body, consisting of law enforcement and community representatives, would assist in gaining community support for CCTV. With the intent of developing guidelines on the appropriate use of CCTV technology within the public sector while ensuring privacy issues were respected, the IACP Private Sector Liaison Committee initiated a CCTV summit (IACP, CCTV Guidelines, 2001). The Summit participants included CCTV manufacturers, law enforcement organizations, civil liberty organizations, tort and constitutional lawyers, state and federal regulators, and local citizens groups. Despite the frequency of CCTV use on the national and local levels, there were no consistent policies or procedures in place to guide the use of this technology. Given the ethical, legal, and other important issues implicated in the use of CCTV technology in the public sector, the members of SIA, IACP, and NSA recommended that public safety officials and law enforcement agencies adopt some or all of the written guidelines they developed to assist and facilitate the ethical and standardized use of CCTV in the local community (IACP, CCTV Guidelines, 2001). The overall recommendations of the participants in the study by the International Association of the Chiefs of Police (IACP 2001) were to limit and control circumstances in which CCTV would be used to include areas in the public where there was no expectation of privacy, "including unenclosed areas (public streets, sidewalks, and parks, etc.) and enclosed areas (building lobbies, corridors and elevators, etc.) To qualify as a

constitutionally protected "reasonable expectation of privacy," the individual must have an actual expectation of privacy and that expectation must be one which society recognizes as reasonable" (IACP, CCTV Guidelines, 2001: 6). For example, even though the place called 'public washrooms' utilized the term 'public' as a descriptor, there was an expectation of privacy in all washrooms; therefore, areas such as public washrooms and change rooms would not utilize CCTV.

> The courts have consistently found that an individual does not have a reasonable expectation of privacy when he or she is in a public place. Behaviour and activity exhibited in a public area is obviously available for observation by others. Police observation of activities conducted in plain view in a public place, therefore, does not violate the Fourth Amendment guarantee against unreasonable search and seizure, regardless of whether the observation occurs through the physical presence of a person at the scene or through the assistance of CCTV technology. Similarly, there is no violation of personal privacy rights under the Fourteenth Amendment when an individual's public behaviour is observed by a video camera (IACP, CCTV Guidelines, 2001: 6).

Even though the American courts determined that CCTV cameras in public places were not a violation to an individual's privacy, the IACP's CCTV Guidelines emphasized the ethical and responsible use of CCTV technology as a tool for use in public safety and security, and were critical components of the success of current and future public safety applications of CCTV and other evolving technologies. The guidelines were designed in such as a way as to answer commonly asked questions, and then to outline very specific and easy to understand guidelines.

Similarly, in the fall of 2005, in Britain, a paper was presented to the Home Office Crime Reduction Delivery Board (CRDB) by the Association of Chief Police Officers (ACPO) which argued for a multi-agency approach to determine the needs and views of all stakeholders interested in or currently working on the development of CCTV in public

spaces. The Home Office agreed to the recommendations and committed to forming a joint team of ACPO and CRDB representatives tasked with two main goals: (1) to review the current CCTV infrastructure to establish its effectiveness in terms of crime and disorder reduction and detection; and (2) through consultation with various agencies, to develop a strategy that improved the effective use of CCTV in terms of crime and disorder reduction and detection, taking into account developing technology and threats (National CCTV Strategy, 2007).

The team's work began in January 2006 and involved a series of workshops with various stakeholders and experts, as well as consultation exercises at a variety of conferences, including the ACPO/HOSDM CCTV conference with Town Centre CCTV Managers, the Thinking Strategically about CCTV conference in March of 2006, and the CCTV Users Group Conferences held in April and October 2006, and in April 2007. A number of smaller meetings were also held with the Information Commissioner's Office (ICO), the ACPO Digital Imaging Project Board, ACPO ANPR, CCTV User Group, the Public CCTV Managers Association (PCMA), town centre managers, and other interested groups. During this information gathering phase, the National Policing Improvement Agency (NPIA) was also being formed. The work that emerged involved the analysis of the information gathered. It became clear that the data collected could be categorized into ten broad issues: the need for standards in all aspects of CCTV; the need for clear guidelines on registration, inspection, and enforcement; training of all personnel; the police use of CCTV; storage/volume/archiving/retention issues; the need for CCTV Networks – live and stored; equipping, resourcing, and standardisation within the Criminal Justice System (CJS); emerging technologies/changing threats/new and

changing priorities; partnership working; and financial and resource management (National CCTV Strategy, 2007).

The following concerns and conclusions were determined through the consultation with key stakeholders. Incompatible systems have led to the police employing specialist technical staff to recover and process digital CCTV footage as the CJS had difficulty playing back the formats being used. In terms of standardizing images, the picture quality of CCTV systems varied considerably and was often far from ideal, especially if was being used for primary identification of a suspect and identification was being sought. Furthermore, it was recommended that existing pan-tilt-zoom (PTZ) cameras be supplemented with fixed cameras capable of continually providing good quality images for post-investigation use. Other concerns raised included the outdated and difficult to read nature of the operational guide and supplementary documentation. This is currently being reviewed and is being brought up to date. There was also a vast difference and variance in the quality and usefulness of the business processes employed across the CCTV landscape. Finally, because it is unclear how accurate previous estimates of camera numbers were, consultation with local authorities was an ongoing effort aimed at determining an accurate number. This uncertainty also extended to the exact location of all deployed cameras and whether they were covering the correct areas, if the images they produced were useful for their intended purpose, and whether they were being used effectively by the police. Without a better understanding of the degree of coverage, or clearer and more supported end to end procedures, future guidance around common standards in all the areas of concern will fall far short of what is required to ensure a meaningful, strategic program. Increased CCTV effectiveness can

be achieved if actively monitored town centre CCTV schemes are also encouraged to monitor existing CCTV systems in other largely public areas, such as railway/tube stations, and, where possible, onboard CCTV in buses, the subways, and train carriages extending to shopping centres, football stadiums, and arenas; thus, creating a de-facto hub for public space CCTV. It should be the aim of those responsible for the management of the system that such monitoring is carried out in a fully coordinated way (National CCTV Strategy, 2007).

In 2007, the development of a draft strategy was circulated back to all the stakeholders for input. A new board was then tasked with acting on the recommendations (National CCTV Strategy, 2007). The final recommendations of the Home Office's report were as follows:

- Establish digital CCTV standards based on agreement between the police, the criminal justice system, and CCTV operators. Ideally, one format of digital video would be agreed upon and managed by a technical standards group.
- Standards should be set more generally by a broader stakeholder group with the goal of looking at national and international CCTV standards. One of the ways this might be achieved is through the involvement of national and international standard setting bodies designed to seek collaboration between industry, and national and international policing organizations.
- Continue the review of the British operational requirements manual with the completed manual being designed as a user friendly guide to provide guidance on recommended minimum image quality, as well as how to test the systems once they are installed.
- Review the purpose and location of all CCTV cameras - owners of all systems should be required to conduct a review of all cameras being used in public space with details of their purpose and an analysis of whether the cameras meet their intended purpose.

- Develop a ‘partnership working governance body’ aimed at organizing a national strategy to ensure a correct balance between cameras being used by police and all other cameras.
- The current ‘pan tilt and zoom’ (PTZ) technology cannot be used for different purposes by a variety of users at the same time, in that there is a need for technical requirements as well as technical advancements designed to allow for multiple purpose use - at minimal costs.
- Recommendations between the police and criminal justice system about what CCTV systems need to be able to achieve for investigation, detection, and prosecution requirements.
- Development of a mapping system to determine where the cameras are and to identify any weaknesses in coverage. This should be done in conjunction with national intelligence systems designed with threat assessment, crime hot spot, serious crime, terrorism, and specific financial or strategic locations in mind. This would need to be done nationally in order to have the best strategic value.
- Local CCTV owners and operators should be expected to develop and implement job profiles, standard operating procedures and guidance documents, key performance indicators, model business cases, and stakeholder mapping interfaces. These local documents could also serve to supplement and compliment those of the police.
- Sharing of best practices, standards, case management, and operational procedures among stakeholders to avoid duplication while ensuring consistency of practice.
- Extend the jurisdiction of town centre CCTV systems to monitor railway, commuter stations, and, where possible, on-board buses and trains. Extension could later branch further to shopping malls, sport stadiums, and public street systems leading to an extensive hub of public space CCTV. This expanded system would be done in conjunction the local authorities (National CCTV Strategy, 2007).

Beyond the development of guidelines, other important elements of program management are measurement, assessment, and evaluation. In the IACP survey (2001), agencies were asked if they had measurement systems in place designed to evaluate the effectiveness of their CCTV systems. “Ninety-six percent of respondents do not incorporate measurement systems of any kind. Despite the lack of measurement systems,

when asked about the effectiveness of CCTV, the overall response indicated that there had been marked improvements in police operations (IACP, 2001: 5).

Key components of an evaluation plan which are often easily overlooked are an understanding of specific management details or incidents, and an understanding of their potential effects on the overall system. For example, details and implications specific to technical setbacks, delays, differences in equipment requirements, policies and procedures of tape storage and handling, and differences in the installation process will all have an effect on a CCTV system, yet may not be a consideration within the formal evaluation plan. Details specific to the control room operations, including qualifications and training of operators, management approaches, and scheduling, will also have an effect on the system and should be considered part of the evaluation process. Every CCTV system and its placement should be planned and designed according to its intended use. Additionally, an understanding and measurement of what is expected from the system, and a plan to achieve and measure these expectations should be incorporated into an evaluation plan. Cost and financial assessment considerations should also be measured as part of the overall evaluation strategy (Gill and Spriggs, 2005).

In summary, the effective management of CCTV programs faces several challenges including: unifying the development of technology and programs to ensure ease and facilitation of information sharing across law enforcement agencies and intra-national boundaries; consistent and updated training of CCTV personnel; the development of public evaluation/surveys; and site-specific, controlled studies. Researchers of CCTV have attempted to address these needs, yet the findings and support for or against such systems continues to be mixed. Insofar as the public's role is concerned, it is important

for law enforcement agencies, local government, and community members to increase the level of public involvement in understanding CCTV for what it can and cannot do. This would assist in ensuring that decisions specific to implementation or non-implementation of CCTV are founded in evidence-based knowledge, education, and realistic expectations associated with the evidence. As an example of this need, Maguire (2004) argued that the Crime Reduction Programme (CRP) in Britain began its course with every intention of ensuring its development would be based on solid research and that its evolution would occur according to the outcomes and measurement of these outcomes. However, because of a number of pressures, it was unable to follow through entirely on this goal. Instead, it was "sold to politicians as contributing to the government's challenging crime reduction targets, an aim which progressively took priority over research. It was over-ambitious in scale and raised unrealistic expectations of its outcomes" (Maguire, 2004: 213). As part of this original intent, the British government allocated 10% of its original CRP budget to evaluations with the goal that these be completed by external researchers. The government also noted, that each and every project would be evaluated. Unfortunately, this did not happen. If this research had been done, we would all benefit from a vast amount of research on a variety of interventions and would likely have a greater understanding of 'best practices' specific to CCTV program development and design. To this end, the importance of program evaluation and measurement cannot be understated. A commitment must be made to public safety at the onset of all programs and interventions. Value must be placed on the importance of research and evidence-based decision making for all phases of program development, including policy development through to practice. As well, in order to achieve the most comprehensive and accurate

program evaluation, a program must run for a sufficient period of time. Using the case of Britain's Crime Reduction Programme, the initial plan was for the CRP program to run for a 10 year period with the intention of allowing for a process of testing, learning and feedback, and a staggered 'rollout' in which identified cost-effective interventions would gradually be implemented on a broader scale (Maguire, 2004: 217). Unfortunately, due to the high political profile raised by the need to 'sell' the idea for the CRP to politicians, the programme was subjected to considerable scrutiny and political attention. In this way, the elevated expectations, high level of scrutiny, and an ambitious schedule made the program vulnerable to a desire for quick results, often influenced by the electoral cycle (Maguire, 2004; 217). Ideally, if a program could be implemented and managed without political interference or influence, it would likely result in a more successfully managed and more objectively evaluated intervention.

Chapter Six: Recommendations and Conclusion

Throughout North America and Europe, policing agencies, governments, and private sector interest groups have been looking increasingly to the development and implementation of CCTV technology to address specific issues of public safety, fear of crime, and perceptions of social disorder. As noted in the introduction, Bournemouth, a city in the UK, became the first to implement a permanent public CCTV camera in 1985 (McCahill and Norris, 2002). CCTV began to gradually spread to other towns and cities throughout the UK over the following decade and, by the end of the 1990's, over 500 monitoring systems were in place. "Recent estimates indicate that 800 publicly funded systems are operational, supporting more than 40,000 public cameras across the UK." (Hier et al., 2007: 728). This technology currently serves a variety of purposes including addressing troubled downtown business districts, deterring and apprehending offenders in criminally active public housing communities, increasing safety or feelings of safety in public spaces, such as in parks and on streets, traffic monitoring, and assisting in the decision making of infrastructure planning (IACP Executive Brief, 2001).

While CCTV has evolved as a program to address concerns of crime, it has not consistently proven to actually work. Inconsistencies, contradictions, or minimal effects have been found in the evaluation of open street camera surveillance systems. Yet, CCTV is often being turned to as the answer when a crisis or spike in crime occurs. Political influences and cases involving high profile publicity have contributed to the implementation of CCTV systems, instead of research and evidence. While Britain has led the way in terms of the implementation of CCTV for crime control purposes, CCTV

is increasingly becoming the popular choice in many countries and is often relied upon for the impression it gives that something is being done to address the issues, especially in high profile cases (Norris et al., 2004). Importantly, public perception of CCTV, especially insofar as the invasion of privacy is concerned, influences its successful implementation. The IACP survey (2001), as well as the Home Office study in the UK entitled "Police Attitudes To and Use of CCTV" (Levesley and Martin, 2005), suggested that the overall success of any plan to carry out an effective CCTV program was largely dependent on public acceptance. The programs which have succeeded to date tended to be in locations where there were no expectations of privacy or where privacy had been voluntarily surrendered, such as in airports (International Association of Chiefs of Police Executive Brief, 2001). "Taking into account the reported success of CCTV thus far and the avoidance of infringing on citizen's privacy, police agencies and city and county governments will likely continue to explore what CCTV can do to increase the effectiveness of law enforcement" (International Association of Chiefs of Police Executive Brief, 2001: 13). CCTV could provide real benefits if the technology was used and directed correctly, taking into account the new threats to privacy that arise with new advances in viewing capabilities. "Improving the quality of CCTV images will support the development of current, complimentary technologies such as Automatic Number Plate Recognition (ANPR) and future technologies such as facial recognition" (National CCTV Strategy, 2007: 8).

Video surveillance in public spaces puts everyone under scrutiny, whether they have done something wrong or not. This, in itself, is an important argument for many proponents of CCTV who argue that, if you have done nothing wrong, there should be no

problem. Privacy specialists argued, however, that on-going public scrutiny through the use of public space CCTV eradicates the expectation of privacy and anonymity that citizens in a free society have become accustomed to and which are promoted as a cornerstone of a democratic society. In an effort to accommodate both sides of the CCTV argument, the Canadian guidelines were developed and printed in March 2006 to ensure effective yet constitutionally lawful, CCTV systems are developed and managed in Canada. The primary 15 recommended guidelines as noted in Chapter Four, are recommended for consideration to ensure that the use of CCTV technology is implemented, maintained, and managed according to a respectful awareness of privacy considerations.

Overall, it is recognized that the UK is a leader in the development of the implementation of CCTV, and, most recently, they have emerged as leaders to ensure that CCTV standards are developed and adhered to. For this reason, it is recommended that the model of implementation and the guideline criteria developed in the UK be understood and seriously considered for use by all agencies contemplating CCTV implementation. Also, as a result of the complexities surrounding the issues of privacy and human rights, the Constitution Project in the U.S. has also developed a comprehensive document entitled "Guidelines for Public Video Surveillance – a Guide to Protecting Communities and Preserving Civil Liberties", the details of which should also be reviewed and considered for use by all those considering the implementation of CCTV in public spaces. Each of these recommended documents - the Canadian Office of the Privacy Commissioner Guidelines, the UK National Standards guide, and the American Guide to Protecting Communities and Preserving Civil Liberties, recognized the need for

on-going and open communication, consultation, program evaluation, and partnership development. More and more recognition is being made in favour of rational and evidence-based decision making in crime prevention and deterrence program implementation and practice. Yet until recently, crime prevention programs had often been put in place or have continued to operate without strong evidence that they actually worked to achieve their intended goals. In the National Crime Prevention Centre of Canada's research report published in 2007, an overview of scientific trends, results, and implications for Canada was completed which outlined several considerations as having an influence on the selection, maintenance, expansion, or termination of crime prevention programs. Some of these influences included changing government priorities, as well as politician's short time horizons. Despite these complications in the past, the emerging trend toward evidence-based decision making in crime prevention is beginning to take hold. Support for evidence-based crime prevention is growing as a result of a number of key influences, including the move towards evidence decision making in other disciplines, such as medicine, as well as the development of large scale reports in a variety of fields on "what works". While this trend is on the rise and may help to simplify decisions specific to crime control programs and interventions, the questions surrounding CCTV remain complicated. Gill and Spriggs (2005) summarized the complexity of the issues of CCTV very well by stating:

> Too much must not be expected of CCTV. It is more than just a technical solution; it requires human intervention to work to maximum efficiency and the problems it helps deal with are complex. It has potential, if properly managed, often alongside other measures, and in response to specific problems, to reduce crime and to boost the public's feeling of safety; and it can generate other benefits. For these to be achieved though, there needs to be greater recognition that reducing and preventing crime is not easy and that, ill-conceived solutions are unlikely to work no matter what the investment (Gill and Spriggs, 2005: 121).

Implicit in the acceptance of the complexities associated with CCTV and its use as a tool to assist in creating safe streets is the direction and recognition of the need for future research and study on the effectiveness of CCTV.

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